THE

TASMANIAN FLORA

BY

LEONARD RODWAY,

GOVERNMENT BOTANIST OF TASMANIA.

WITH DRAWINGS OF SOME TYPICAL SPECIES

Tasmania:
JOHN VAIL, GOVERNMENT PRINTER, HOBART.

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ADDITIONS AND CORRECTIONS.

Page 45, line 42.—For "A small order," read "A small genus."

Page 83, line 47.—Add Fluted Cape, South Arm.

Page 136, line 33.—Add Muddy Plains, near Sorell.

Page 249, lines 32 and 50.—For "G. FITZGERALDI, *Rod.*," read "G. MICROSTACHYA, *Benth.*"

Page 250, line 7.—Add Victoria and New South Wales.

Page 258, line 5.—Add Freycinet's Peninsula.

Page 272, at the bottom of the page.—Add 3. B. ARENARIUS, *Lab.* Brighton South Arm, &c. Introduced.

Page 285, line 7.—For "Peris" read "Pteris."

Page 287, after line 27.—Add 3. P. PENNIGERUM, *Forst.* Duck River, also New Zealand.

Page 291, line 26.—For "inches" read "lines."

Page 291, line 27.—For "½ inch" read "½ line."

ADD TO INDEX.

Polypodium pennigerum 287
Thryptomene micrantha 51
Zieria cytisoides 21
Zieria smithii 21
Zieria veronicea 21

PREFACE.

This work is mainly designed to encourage junior students to take a general interest in the vegetable beings living in this State. In pursuit of this end technicalities have been reduced, descriptions and general information have been abbreviated, and economy has been studied in every part.

The system adopted is that of Hooker and Bentham, the one that is at present in use in most English-speaking communities. Many efforts have been made in recent years to improve on this. The late Baron von Mueller designed a system that is at present used largely in Victoria, and partially in New South Wales and South Australia, but it is doubtful if any extensive change will be made until a scheme is presented containing such radical improvements that a prospect of reasonable permanence may be foreseen.

The main objection to Hooker and Bentham's system is that it contains a section—the Monochlamydeæ or Incomplete—that really is a sort of dumping-ground for all forms that have no relations elsewhere. This, of course, is not as it should be. Here we have primitive forms that have not yet acquired the typical Dicotyledonous form classified with plants of a reduced character that once possessed that form and have evolved away from it. But the state of affairs is not improved by distributing the Incompletes haphazard amongst the rest. Students should always bear in mind that not only are the great groups of plants descended from types long since lost, but the smaller groups and Natural Orders are seldom related in direct descent, and therefore any system that undertakes to classify plants in linear succession must necessarily be arbitrary, and almost entirely erroneous. Mueller's arrangement, and a more recent system by Dr. Warming, of Copenhagen, will be found in the Appendix.

Plants, other than grasses, that have established themselves since Tasmania has been settled have only in few instances received the attention of natives, but are placed in an indented position. Had convenience permitted, their descriptions would have appeared in smaller type.

The Plates must not be looked upon as the work of the Printing Department; they are faithful copies of the author's drawings. Had the departmental artists been permitted to idealise them some departure from a faithful copy of nature must have resulted, besides which increased cost would have necessitated a considerable decrease in number, which may have been the reverse of desirable.

The intersticial keys are not uniform. Those necessarily arbitrary are dichotomously arranged; where permissible more direct comparison has been adopted.

Flowering periods are more general than particular, and local distribution is, perhaps, all too meagre.

The synonyms included are only those required for reference to VON MUELLER'S works, BENTHAM'S "Flora Australiensis," and HOOKER'S "Flora Tasmaniæ."

In the Appendix will be found a Dictionary that is something more than a Glossary. Names of genera and most of those constructed from the names of individuals have not been included. Immediately before the body of the work, appears a Key to the Natural Orders and some other groups. This is constructed purely to help those who approach the study with little or no previous experience.

The author would take this opportunity of expressing his thanks to very numerous friends who have helped him. Chiefly amongst these W. V. FITZGERALD, who for years forwarded valuable material; T. B. MOORE, for many most interesting plants; AUG. SIMSON, for the use of his fine collection; ALEX. MORTON, whose persistence alone prevented disaster during the incubation of this work; and R. M. JOHNSTON, for kindly help whenever needed.

Hobart, 1903.

CLASSIFICATION.

In the Flora of a country or district it is customary to include only the races of plants that have developed true flowers, the races that stand in an intermediate position with their floral elements defined, but still dispersed or collected in cones (as in the Lycopods and Conifers and the more elaborated branch of Cryptogams), the Ferns that bear no flowers in the true sense, but whose principal development bears spores only.

> The term flower is sometimes applied to the gametic reproductive organs of Cryptogams. This is not an exact use of the term. The name flower was given to and is considered to denote any specialised aggregation of foliar members on or about some of which are developed the organs that produce the spores in which takes place the rudimentary development that is homologous with the whole gametophytic generation of the Cryptogams.

The following is the scheme and definitions of the plants described :—

ANGIOSPERMS.—Plants in which the ovules are developed in more or less closed sacks. The spore-bearing members, the stamens and pistil, are in typical instances gathered into clusters surrounded by much-altered leaves, the whole specialised mass being termed a flower. In many primitive forms this type-condition has not been reached, in others various reductions from the perfect condition of the flower have taken place. But however much the flower may be simplified, there are no Angiosperms that stand on the border-land of this and any other division. The division is well-marked and circumscribed.

This division is composed of two very distinct and well marked classes.

Class 1.—*DICOTYLEDONS.*

Class 2.—*MONOCOTYLEDONS.*

Dicotyledons, generally termed the Higher Flowering Plants, from their tissues and members having attained a more complex structure. The leaves are often very varied in shape, with the smaller vascular bundles forming a more or less intricate net of meshes in the green substance of the leaf, though in some few plants, *e.f. Epacridaceæ*, the veins are all or mostly parallel. The elements of the flowers are almost always in cycles of 4 or 5, rarely of 3 or 6. The embryo, which is often sufficiently developed to completely exclude the albumen, has always two opposite seed-leaves or cotyledons, except in some parasitic plants, where even these members have been reduced out of existence. This class is here arranged as follows :—

Sub-Class 1.—*Choripetalæ.* Calyx and corolla normally present. Petals free from one another, except in few aberrant forms.

Series 1.—*Thalamifloræ.* Petals and stamens inserted into the torus below the pistil.

Series 2.—*Discifloræ.* Petals and stamens inserted on or about a fleshy disk formed on the torus.

Series 3.—*Calcifloræ.* Torus more or less developed into a tube that may be hardly apparent or grown to the full height of the pistil, and then often confluent with it. The petals and stamens inserted on this floral tube.

Sub-Class 2.—*Gamopetalæ.* Calyx and corolla normally present. Petals more or less united. Stamens usually inserted on the corolla-tube.

Series 1.—*Epigynæ.* Sepals and petals inserted on the top of the ovary.

Series 2.—*Hypogynæ.* Ovary free, above the insertion of the corolla.

Sub-Class 3.—*Monochalamydeæ.* Perianth normally consisting of a single envelope, or (where double) not conspicuously differentiated. Plants of a primitive type. Also including some reduced forms of doubtful affinity.

The following is a linear classified list of Dicotyledonous Orders grouped in Alliances:—

THALAMIFLORÆ.

ALLIANCE 1.—RANALES.

Order i. *Ranunculaceæ.*
ii. *Dilleniaceæ.*
iii. *Magnoliaceæ.*

ALLIANCE 2.—PARIETALES.

Order iv. *Papaveraceæ.*
v. *Cruciferæ.*
vi. *Violaceæ.*

ALLIANCE 3.—POLYGALINEÆ.

Order vii. *Pittosporaceæ.*
viii. *Tremandraceæ.*
ix. *Polygalaceæ.*

ALLIANCE 4.—CARYOPHYLLINEÆ.

Order x. *Frankeniaceæ.*
xi. *Caryophyllaceæ.*
xii. *Portulacaceæ.*

ALLIANCE 5.—GUTTERIFERALES.

Order xiii. *Elatinaceæ.*
xiv. *Hypericaceæ.*

ALLIANCE 6.—MALVALES.

Order xv. *Malvaceæ.*
xvi. *Sterculiaceæ.*
xvii. *Tiliaceæ.*

DISCIFLORÆ.

ALLIANCE 7.—GERANIALES.

Order xviii. *Linaceæ.*
xix. *Zygophyllaceæ.*
xx. *Geraniaceæ.*
xxi. *Rutaceæ.*

ALLIANCE 8.—CELASTRALES.

Order xxii. *Stackhousiaceæ.*
xxiii. *Rhamnaceæ.*

ALLIANCE 9.—SAPINDALES.

Order xxiv. *Sapindaceæ.*

CALYCIFLORÆ.

ALLIANCE 10.—ROSALES.

Order xxv. *Leguminosæ.*
xxvi. *Rosaceæ.*

ALLIANCE 11.—SAXIFRAGALES.

Order xxvii. *Saxifragaceæ.*
xxviii. *Crassulaceæ.*
xxix. *Droseraceæ.*

ALLIANCE 12.—MYRTALES.

Order xxx. *Halorageæ.*
xxxi. *Myrtaceæ.*
xxxii. *Lythraceæ.*
xxxiii. *Onagraceæ.*

ALLIANCE 13.—CUCURBITALES.

Order xxxiv. *Cucurbitaceæ.*
xxxv. *Ficoidaceæ.*

ALLIANCE 14.—UMBELLALES.

Order xxxvi. *Umbelliferæ.*
xxxvii. *Araliaceæ.*

GAMOPETALÆ EPIGYNÆ.

ALLIANCE 15.—RUBIALES.

Order xxxviii. *Caprifoliaceæ.*
xxxix. *Rubiaceæ.*

ALLIANCE 16.—ASTERALES.

Order xl. *Compositæ.*

ALLIANCE 17.—CAMPANALES.

Order xli. *Campanulaceæ.*
xlii. *Goodeniaceæ.*
xliii. *Stylidaceæ.*

GAMOPETALÆ HYPOGYNÆ.

ALLIANCE 18.—ERICALES.

Order xliv. *Ericaceæ.*
xlv. *Epacridaceæ.*

ALLIANCE 19.—PRIMULALES.

Order xlvi. *Plumbaginaceæ.*
xlvii. *Primulaceæ.*

ALLIANCE 20.—GENTIANALES.

Order xlviii. *Oleaceæ.*
xlix. *Apocynaceæ.*
l. *Loganiaceæ.*
li. *Gentianaceæ.*

ALLIANCE 21.—POLEMONIALES.

Order lii. *Boraginaceæ.*
liii. *Convolvulaceæ.*
liv. *Solanaceæ.*

ALLIANCE 22.—PERSONALES.

Order lv. *Scrophulariaceæ.*
lvi. *Lentibulariaceæ.*
lvii. *Myoporaceæ.*

ALLIANCE 23.—LAMIALES.

Order lviii. *Labiatæ.*
lix. *Plantaginaceæ.*

MONOCHLAMYDEÆ.

ALLIANCE 24.—CHENOPODIALES.

Order lx. *Phytolaccaceæ.*
lxi. *Chenopodiaceæ.*
lxii. *Amarantaceæ.*
lxiii. *Scleranthaceæ.*
lxiv. *Polygonaceæ.*

ALLIANCE 25.—LAURALES.

Order lxv. *Monimiaceæ.*
lxvi. *Lauraceæ.*

ALLIANCE 26.—PROTEALES.

Order lxvii. *Proteaceæ.*
lxviii. *Thymeliaceæ.*

ALLIANCE 27.—EUPHORBIALES.

Order lxix. *Euphorbiaceæ.*

ALLIANCE 28.—URTICALES.

Order lxx. *Urticaceæ.*

ALLIANCE 29.—AMENTALES.

Order lxxi. *Casuarinaceæ.*
lxxii. *Cupuliferæ.*

ALLIANCE 30.—SANTALALES.

lxxiii. *Santalaceæ.*

The MONOCOTYLEDONS, which are looked upon as a lower class of flowering plants, are notable chiefly for their leaves retaining a simple shape, parallel venation, and often sheathing bases. The cycles of the flowers are generally composed of 3 or 6 members. The structure of the embryo is distinct, in the first leaf being solitary.

The Monocotyledons do not stand as an intervening link between Dicotyledons and lower plants, but form a well-marked group of specially-developed types from a primordial centre, some of the forms, as *Gramineæ*, being very specialised. At the same time, in the geologic record they greatly antedate the other class. Monocotyledons have been traced back even to the Carboniferous era, while Dicotyledons only make their appearance just prior to the Cretaceous. No Tasmanian member of this division exceeds the condition of perennial herbs.

The following is the classification of the Monocotyledons here adopted:—

SUB-CLASS—PETALOIDEÆ EPIGYNÆ.

Order lxxiv. *Hydrocharideæ.*
lxxv. *Orchidaceæ.*
lxxvi. *Burmanniaceæ.*
lxxvii. *Iridaceæ.*
lxxviii. *Amaryllidaceæ.*

SUB-CLASS—PETALOIDEÆ HYPOGYNÆ.

Order lxxix. *Liliaceæ.*
lxxx. *Xyridaceæ.*
lxxxi. *Juncaceæ.*
lxxxii. *Typhaceæ.*
lxxxiii. *Lemnaceæ.*

Sub-class—Petaloideæ hypogenæ.—*continued.*

Order lxxxiv. *Naiadeæ.*
lxxxv. *Alismaceæ.*

Sub-class—Glumifloræ.

Order lxxxvi. *Centrolepideæ.*
lxxxvii. *Restiaceæ.*
lxxxviii. *Cyperaceæ.*
lxxxix. *Gramineæ.*

GYMNOSPERMS.—Plants in which typical ovules are developed and the gametic generation, though still very rudimentary, is much more defined than in Angiosperms. The ovules are not developed in closed sacks or carpels, but upon the upper surfaces of scale-like bracts, or may appear naked and terminal, sometimes more or less enclosed in a fleshy aril, microspores still maintaining the character of pollen and formed in well-developed stamens. Stamens and pistils often massed into cones, but no specialisation of members to form true flowers.

The Gymnosperms, represented in the present day principally by Conifers, such as Pines, Cypresses, Yews, date back long before the time of Angiosperms, forms occurring as remotely as the Old Red Sandstone era. And whereas in the present day the Angiosperms contain as varied forms as perhaps they ever did, the Gymnosperms have long passed their prime, which appears to have been in the Mesozoic era. Also, though we have no evidence yet unfolded to demonstrate the descent of the great sub-divisions of the Angiosperms, we have abundant evidence of the close relationship of the Gymnosperms to the ferns through the Heterosporous Lycopods

Representatives of only two orders occur in Tasmania:—

Cupressaceæ (Cypresses). Cover scales and ovuliferous scales entirely fused, forming somewhat solid cone scales that usually bear many ovules.

Taxaceæ (Yews). Ovuliferous scale wanting. Cones never woody, generally succulent. Ovule sometimes solitary and immersed in a fleshy aril.

PTERYDOPHYTA.—*(Fern-tribe).*—Plants which do not develop flowers, and whose spore-bearing sacks are either developed in clusters or singly, upon the backs or margins, or sometimes immersed in the tissues of, leaves or at the base or axils of leaves. The spore-bearing leaves similar to the barren leaves, or sometimes greatly specialised, but never assuming the character of cones. Spores in some orders of two kinds, small and large; the small-spored sacks never assuming the specialised form of stamens, the microspores producing semi-enclosed gamophytic growth, in which are developed antheridia that produce motile gametes: the large-spored sacks producing megaspores that develop semi-enclosed gamophytic growth, in which is produced archegonia that develop each an ovum. This development of the megaspore differs in little but degree from the development taking place in the Gymnosperms, only in the latter they remain attached to the parent plant, while in the former they are shed from the sporangia before, or soon after, commencing gamophytic development. In other orders the spores are all of one size; each spore grows into an independent being in the form of a flat, green, thalloid plant or prothallus, from a quarter to a few inches in size, with the essential organs of reproduction, the antheridia and archegonia, developed on the under surface.

The plants representing the Pterydophyta in our flora are few in number, and varied in structure. They are the remaining representatives of a vast and luxuriant flora that, dating back into early Palæozoic times, reached a marvellously rich development in the later Palæozoic ages, to dwindle down to a comparatively modest rank in the present day. We find accordingly that many present-day forms—little, retiring plants, with apparently no immediate relatives—are the sole surviving descendants of noble and important families.

The Pterydophyta, on the whole, form a well-defined group, closely connected on one side with Gymnosperms, but on the other no immediate relationship to lower plants can be traced. They may be classified as follows:—

Class *Filicinæ* (Ferns in the broadest sense).
  Sub-class *Filices* (True-ferns).
  Sub-class *Hydropteridæ* (Water-ferns).

Class *Lycopodinæ* (Club-mosses).
  Sub-class *Lycopodiaceæ* (Homosporous).
  Sub-class *Selaginellaceæ* (Heterosporus).
  Sub-class *Isoetaceæ* (Quill-worts).

KEY TO THE NATURAL ORDERS.

1	Plants developing true flowers and multiplying by producing seeds … … … … … … … … … … … … … … …	2. Phænerogams.
	Reproductive organs not assuming the typical floral design, forming seeds upon scaly bracts, often in cones…	(p. 275.) Gymnosperms.
	Flowerless; reproducing by means of spores … … … … …	161. Cryptogams.
2.	Parts of flowers seldom in threes or multiples of that number (except *Elatine* and *Euphorbia*), sometimes collected into cones; leaves usually with netted veins, and seldom with a sheathing base (except *Epacridaceæ*).	3. Dicotyledons.
	Parts of flower usually 3 or 6, if fewer or obscure surrounded by more or less unequal scarious glumes, never in cones. Leaves generally with parallel veins and sheathing bases (except many *Orchids*) … … … … … …	147. Monocotyledons.
3.	Flowers small or minute, few or more often numerous, in a dense head surrounded by bracts. Stamens (except in *Xanthium*) united in a tube round the style … … … …	xl. *Compositæ*.
	Flowers seldom in dense heads, and when so disposed the stamens are free from one another … … … … … … … …	4.
4.	Herbaceous, mostly annuals… … … … … … … … … … … …	5.
	Trees, shrubs, undershrubs, or climbers, with at least a woody axis, sometimes reduced to dwarf (almost herbaceous) forms … … … … … … … … … … … … … … … …	79.
5.	Leaves, all or most, alternate, radical or none … … … …	6.
	Leaves, all or most, opposite or whorled … … … … … …	54.
6.	Flowers with a distinct calyx and corolla … … … … … …	8.
	Calyx and corolla, though present, obscurely distinct …	7.
	Flowers with only one floral envelope, which may be coloured like a corolla or green and obscure, or without any floral envelope at all … … … … … … … … … … …	39.
7.	Petals irregular, partially united; calyx reduced to 2 small scales … … … … … … … … … … … … … … … …	iv. *Fumaria*.
	Calyx petaloid, irregular; petals smaller, reduced … …	ix. *Polygalaceæ*.
8.	Petals quite free from one another … … … … … … … …	9.
	Petals slightly or distinctly joined … … … … … … … …	24.
9.	Corolla quite regular … … … … … … … … … … … … … …	10.
	Petals not all similar to one another in size and shape …	21.
10.	Petals inserted on the top of the flower-stalk, below the ovary, or on the calyx, near the base … … … … … … …	11.
	Petals inserted above the ovary or on the floral-tube, at a considerable distance from the base … … … … … …	18.
11.	Stamens very numerous … … … … … … … … … … … … …	12.
	Stamens usually 5 to 10 … … … … … … … … … … … … …	15.
12.	Pistil formed of many distinct carpels; leaves divided into distinct or nearly distinct leaflets or segments …	13.
	Pistil entire; leaves lobed or entire … … … … … … …	14.
13.	Sepals usually soon falling; petals and stamens free from the calyx … … … … … … … … … … … … … … … … … …	i. *Ranunculaceæ*.
	Sepals persistent; petals and stamens inserted on the calyx, close to its base … … … … … … … … … … … …	xxvi. *Rosaceæ*.
14.	Stamens dark, free from one another; stigmas forming a disk at the top of the ovary … … … … … … … … … …	iv. *Papaveraceæ*.
	Stamens pale, united in a central column, or in a tube round the style; style distinct … … … … … … … … …	xv. *Malvaceæ*.
15.	Calyx of 5 free sepals; stamens and pistil in the same flower …	16.

Calyx of 5 united sepals; flowers very small; petals and stamens 5; stamens and pistil on separate flowers ... lxix. *Euphorbiaceæ.*
Calyx of 2 or 4 free sepals ... 17.

16. Leaves orbicular, divided into 3 leaflets, or much divided; stamens 10 ... xx. *Geraniaceæ.*
Leaves linear; stamens 5 ... xviii. *Linaceæ.*
Leaves variously shaped, covered with long-stalked sticky glands; stamens 5 ... xxix. *Droseraceæ.*

17. Sepals 4; petals 4; stamens 6, but sometimes some imperfect ... v. *Cruciferæ.*
Sepals 2; petals 5; stamens 5 to 8 ... xii. *Portulaccaceæ.*

18. Floral tube long and free round the ovary; petals inserted at its mouth ... xxxii. *Lythraceæ.*
Calyx-lobes inserted above the ovary ... 19.

19. Ovary distinctly formed of two 1-seeded carpels; sepals, petals, and stamens 5 ... xxxvi. *Umbelliferæ.*
Carpels indistinct, many-seeded; sepals and petals 5; stamens 2; plant densely tufted; moss-like ... xli. *Stylidiaceæ.*
Sepals and petals 4; stamens 8 ... 20.

20. Flowers small, green, obscure; plant usually rough; ovary short, with four 1-seeded cells ... xxx. *Halorageæ.*
Flowers usually conspicuous; ovary linear; seeds very numerous, with a tuft of hairs at one end ... xxxiii. *Onagraceæ.*

21. Corolla nearly regular, with 5 spreading petals ... 22.
Corolla very irregular; petals partially enclosing the stamens and pistil ... 23.

22. Stamens 5; ovary in 2 parts, calyx-lobes and petals inserted above the ovary ... xxxvi. *Umbelliferæ.*
Stamens 10; ovary in 5 parts; calyx and corolla distinctly irregular ... xx. *Geraniaceæ.*

23. Upper petal much larger than and outside the rest; stamens 10; fruit 2-valved ... xxv. *Leguminosæ.*
Upper pair of petals rather shorter than the rest, and recurved; stamens 5; fruit 3-valved ... vi. *Violaceæ.*

24. Corolla regular ... 25.
Corolla irregular, sometimes appearing regular but split on one side ... 35.

25. Corolla inserted below or nearly below the ovary ... 26.
Corolla arising above the ovary, or scarious, and closely enclosing it ... 33.

26. Pistil of 2 to 5 free or nearly free 1-ovuled parts ... 27.
Pistil entire or lobed ... 28.

27. Flowers in an erect spike, or solitary in the leaf axils; stamens not inserted on the corolla ... xxii. *Stackhousiaceæ.*
Flowers in a one-sided coiled raceme; stamens inserted on the corolla ... lii. *Boragineæ.*

28. Stamens 2 or 4; corolla never quite regular, often divided nearly to the base ... lv. *Scrophulariaceæ.*
Stamens 5; corolla quite regular, deeply or slightly divided ... 29.

29. Petals united only at the extreme base; flowers white or pink ... 30.
Petals with a distinct tubular base, often entirely united. 31.

30. Flowers numerous, in one-sided coiled spikes; styles 5 ... xlvi. *Plumbaginaceæ.*
Flowers few, in erect racemes or cymes; 5 filiform processes alternate with the stamens; style single ... xlvii. *Primulaceæ.*

31. Flowers yellow ... li. *Gentianaceæ.*
Flowers white, pink, or blue ... 32

32. Flowers few together, on lateral or terminal peduncles that are never axillary; anthers erect round the style, opening by terminal pores ... liv. *Solanaceæ.*
Flowers axillary, usually solitary; stamens spreading ... liii. *Convolvulaceæ.*

33.	Stamens and pistil on separate flowers; flowers on axillary peduncles	xxxiv. *Cucurbitaceæ.*
	Flowers terminal, perfect	34.
34.	Flowers solitary or few together; corolla herbaceous, white or blue	xliii. *Campanulaceæ.*
	Flowers few or numerous, in dense heads or spikes, small and obscure; corolla scarious, 4-lobed	lix. *Plantaginaceæ.*
35.	Stamens more or less combined with one another; ovary inferior	36.
	Stamens perfectly free	37.
36.	Stamens intimately blended with the style, in a movable trigger-like or irritable column	xli. *Stylidiaceæ.*
	Stamens 5, forming a tube round the style	xliii. *Campanulaceæ.*
37.	Flowers numerous, in dense cushion-like heads, as in *Compositæ*, only the stamens are free	(p. 71.) *Dipsacaceæ.*
	Inflorescence loose	38.
38.	Ovary superior; sepals 2; stamens 2, closely surrounding the ovary: nearly leafless	lvi. *Lentibulaceæ.*
	Ovary superior; calyx 4 or 5-lobed; stamens 2 or 4	lv. *Scrophulariaceæ.*
	Ovary inferior or partially so; corolla split to the base on the upper side; stigma in a linear or curved process.	xlii. *Goodeniaceæ.*
39.	Leafless, or, if leafy, the leaves small, and the stem angled	40.
	Leaves fairly numerous and conspicuous	41.
40.	Leafless parasites, sometimes creeping on the ground: anthers opening by valves	lxvi. *Lauraceæ.*
	Erect, with angled stems: leaves (if present) few and distant	lxix. *Euphorbiaceæ.*
	Stems fleshy, swollen, and jointed	lxi. *Chenopodiaceæ.*
41.	Flowers at least ½ in. diameter	i. *Ranunculaceæ.*
	Flowers under ½ in., mostly obscure and minute	42.
42.	Leaves much divided	43.
	Leaves entire, toothed or lobed	44.
43.	Perianth distinctly inferior	v. *Cruciferæ.*
	Perianth enclosing the ovary, often with long barbed spines	xxvi. *Rosaceæ.*
44.	Leaves with scarious sheathing stipules	lxiv. *Polygoniaceæ.*
	Stipules absent or small	45.
45.	Flowers small, gathered into small, dense, flat, terminal heads, surrounded by an involucre	xxxvi. *Umbelliferæ.*
	Flowers otherwise disposed, if in heads neither flat nor surrounded by an involucre	46.
46.	Plant prostrate, tufted: leaves 1 to 2 lines long	lxviii. *Thymeliaceæ.*
	Plant erect or ascending; leaves exceeding 3 lines	47.
47.	Flowers generally numerous, in terminal or axillary racemes, panicles, or spikes	48.
	Flowers axillary, solitary or few, sessile or nearly so	51.
	Flowers very obscure, terminal or axillary, few together, surrounded by an involucre of leaves; ovary 3-lobed	lxix. *Euphorbiaceæ.*
48.	Flower-clusters strictly terminal	49.
	Flower-clusters chiefly axillary	50.
49.	Flowers in loose racemes	v. *Cruciferæ.*
	Flowers in dense hairy heads	lxii. *Amarantaceæ.*
	Flowers in dense heads or spikes, but not interspersed with long hairs	xxx. *Halorageæ.*
50.	Leaves glabrous, or with white scales	lxi. *Chenopodiaceæ.*
	Leaves bearing few or many coarse, often stinging, hairs.	lxx. *Urticaceæ.*
51.	Leaves broad and flat	52.
	Leaves filiform or fleshy	53.
52.	Leaves exceeding ½ in. Land plants	lxx. *Urticaceæ.*
	Leaves under ¼ in. Water plants	xxx. *Halorageæ.*

53.	Ovary in 4 parts; perianth superior or none	xxx. *Halorageæ.*
	Ovary globose; perianth green, obscure, inferior	lxi. *Chenopodiaceæ.*
	Perianth conspicuous, pink or scarious	lxii. *Amarantaceæ.*
54.	Flowers with a distinct calyx and corolla	55.
	Flowers with but one floral envelope, often obscure	71.
55.	Petals quite free from one another	56.
	Petals slightly or much united	64.
56.	Corolla inserted beneath the ovary	57.
	Corolla inserted above the ovary, or on the calyx, at a distance from the base	61.
57.	Stamens numerous	xiv. *Hypericaceæ.*
	Stamens 10 or fewer	58.
58.	Flowers minute or obscure; sepals, petals, stamens, and carpels 3 or 4	59.
	Flowers often small, but easily defined	60.
59.	Leaves flat; flowers sessile, solitary or in one axil only of a pair of leaves; pistil entire	xiii. *Elatinaceæ.*
	Leaves linear; flowers pedunculate; carpels free from one another	xxviii. *Crassulaceæ.*
60.	Sepals, petals, and divisions of pistil 4; stamens 8	xxi. *Rutaceæ.*
	Sepals, petals, stamens, and styles 5; petals entire; fruit in 10 parts	xviii. *Linaceæ.*
	Sepals and petals usually 5; stamens 10 or fewer; petals often notched, ovary with many seeds on a central placenta	xi. *Caryophyllaceæ.*
61.	Flowers large; petals numerous; leaves thick and fleshy.	xxxv. *Ficoideæ.*
	Petals 5 or 4	62.
62.	Floral tube, like a tubular calyx, free from ovary	xxxii. *Lythraceæ.*
	Calyx-lobes and corolla arising above the ovary; lobes and petals 4	63.
63.	Ovary short; calyx-lobes and petals short and greenish	xxx. *Halorageæ.*
	Ovary long, linear; petals conspicuous, pink, rarely white or yellow	xxxiii. *Onagraceæ.*
64.	Corolla regular or nearly so	65.
	Corolla irregular	70.
65.	Corolla arising from the calyx or floral tube below the ovary	66.
	Corolla and calyx-lobes arising above the ovary	69.
66.	Corolla 4-lobed; stamens 2 to 4	67.
	Corolla 5-lobed; stamens 5	68.
67.	Corolla usually blue, split nearly to the base; stamens 2.	lv. *Scrophulariaceæ.*
	Corolla white, lobes short; stamens 4	l. *Loganiaceæ.*
68.	Flowers blue or pink, solitary in the leaf-axils	xlvii. *Primulaceæ.*
	Flowers white, small; calyx of 2 broad sepals	xii. *Portulacaceæ.*
	Flowers blue, white, or yellow, twisted when dry; calyx 5-lobed	li. *Gentianaceæ.*
69.	Flowers minute, solitary or clustered in the axils, rarely terminal	xxxix. *Rubiaceæ.*
	Flowers conspicuous, blue, terminal, solitary, on a long stalk	xliii. *Campanulaceæ.*
70.	Stem square; ovary of four 1-seeded parts	lviii. *Labiatæ.*
	Stem round; flowers pink, in an elongating spike; ovary entire, 4-seeded	(p. 146.) *Verbenaceæ*
	Stem round; flowers blue or yellow; ovary entire, with two many-seeded cells	lv. *Scrophulariaceæ.*
71.	Leaves pale green; flowers obscure, mostly terminal, and surrounded by an involucre of leaves; ovary in 3 parts.	lxix. *Euphorbiaceæ.*
	Plant not so constructed	72.
72.	Flowers sessile, generally solitary, or few together, in the leaf-axils, and chiefly towards the ends of the branches.	73.
	Flowers stalked, sometimes in branched clusters	76.

73. Leaves linear, hard, rough or dry … … … … … … … … 74.
Leaves filiform to oblong, succulent, fleshy, smooth … 75.

74. Leaves in whorls of 4 or more; corolla distinct … … … xxxix. *Rubiaceæ.*
Leaves opposite, connected at the bases; flowers hard … lxiii. *Paronychiaceæ.*

75. Perianth inferior; ovary entire, globular; leaves opposite. lxi. *Chenopodiaceæ.*
Perianth superior or none; ovary ovoid, often in 4 parts; leaves often in whorls … … … … … … … … … … … … … xxx. *Halorageæ.*

76. Perianth distinctly inferior … … … … … … … … … … … 77.
Perianth superior or appearing so … … … … … … … … … 78.

77. Each flower on a distinct stalk; leaves under ½ in. long… xi. *Caryophyllaceæ.*
Flowers numerous, in branched clusters; leaves 1-3 in. lxx. *Urticaceæ.*

78. Leaves in whorls; flowers herbaceous, white or yellow … xxxix. *Rubiaceæ.*
Leaves opposite, connected at their bases; flowers hard… lxiii. *Paronychiaceæ.*

79. Leaves mostly alternate or none, in some instances in clusters at intervals along the branches … … … … … 80.
Leaves opposite or truly whorled … … … … … … … … 122.

80. Flowers with a distinct calyx and corolla … … … … … … 81.
Flowers with but one floral envelope … … … … … … … … 109.

81. Petals quite free from one another, though sometimes partially adhering … … … … … … … … … … … … … … 82.
Petals more or less united … … … … … … … … … … … … 102.

82. Stamens generally 5, rarely 6, sometimes fewer … … … 83.
Stamens more than 5, often absent from flowers with perfect ovaries … … … … … … … … … … … … … … … … 90.

83. Ovaries superior or nearly so … … … … … … … … … … 84.
Ovary inferior or appearing so … … … … … … … … … … 87.

84. Flowers bright yellow; ovary in 2 or 3 parts … … … … ii. *Dilleniaceæ.*
Flowers pink or white … … … … … … … … … … … … … … 85.

85. Leaves toothed or crenate on the margin … … … … … … xxvii. *Saxifragaceæ.*
Leaves entire on the margin … … … … … … … … … … … … 86.

86. Plant rigid; leaves in small clusters, at intervals; flowers in numerous small (nearly sessile) clusters … … … … … vi. *Violaceæ.*
Plant and leaves otherwise; flowers solitary, stalked … vii. *Pittosporaceæ.*

87. Leaves entire or none … … … … … … … … … … … … … … 88.
Leaves lobed or divided … … … … … … … … … … … … … 89.

88. Petals reduced to small hoods, over-arching the stamens; ovary immersed or appearing inferior … … … … … … … xxiii. *Rhamnaceæ.*
Petals spreading; ovary truly inferior … … … … … … … xxxi. *Myrtaceæ.*

89. Leaves palmately divided; flowers in umbels; fruit succulent … xxxvii. *Araliaceæ.*
Leaves pinnately divided; flowers usually few, in axillary clusters; fruit dry … … … … … … … … … … … … … … … xxxvi. *Umbelliferæ.*

90. Flowers very irregular … … … … … … … … … … … … … … xxv. *Leguminosæ.*
Flowers nearly or quite regular … … … … … … … … … … 91.

91. Leaves divided into leaflets … … … … … … … … … … … … 92.
Leaves entire … … … … … … … … … … … … … … … … … … 93.

92. Leaves with few broad leaflets; petals conspicuous, pink or white … … … … … … … … … … … … … … … … … … … xxvi. *Rosaceæ.*
Leaves with very numerous small leaflets; petals minute, yellow; stamens very conspicuous, much exceeding the corolla … … … … … … … … … … … … … … … … … … … xxv. *Leguminosæ.*

93. Stamens numerous, often in a central column, or hiding the pistil where that organ is present, sometimes few where the pistil is absent … … … … … … … … … … … … 94.
Stamens 10 or fewer, surrounding or at the side of the pistil … 98.

94. Stamens and perianth superior; pistil present … … … … xxxi. *Myrtaceæ.*
Stamens and perianth inferior, or pistil absent … … … 95.

95. Leaves toothed on the margin … … … … … … … … … … … 96.
Leaves entire on the margin … … … … … … … … … … … … 97.

96.	Stamens surrounding the ovary; fruit a berry	xvii. *Tiliaceæ.*
	Stamens on a separate flower; fruit dry	xv. *Malvaceæ.*
97.	Leaves flat or linear, and pungent; flowers small, often clustered, yellow; stamens very numerous, surrounding the ovary; fruit a legume	xxv. *Leguminosæ.*
	Leaves flat, thick; flowers few, in racemes, nearly white; stamens about 15-20, usually on flowers without pistils; fruit a black berry	iii. *Magnoliaceæ.*
	Leaves flat; flowers solitary, with obscure perianths; or leaves linear, and flowers few (in clusters), conspicuous; petals white; stamens usually very numerous, on separate flowers to the pistils; fruit rather dry, 3-lobed.	lxix. *Euphorbiaceæ.*
98.	Under-sides of the leaves densely clothed with stellate hairs	xvi. *Sterculiaceæ.*
	Leaves hairless, or nearly so	99.
99.	Flowers yellow	ii. *Dilleniaceæ.*
	Flowers pink or white	100.
100.	Perianth and stamens superior	xxxi. *Myrtaceæ.*
	Perianth and stamens inferior	101.
101.	Flowers mostly red; anthers linear, black; ovary entire.	viii. *Tremandraceæ.*
	Flowers white, or nearly so; anthers ovate, pale, ovary 4-lobed	xxi. *Rutaceæ.*
102.	Stamens inserted below the ovary	103.
	Stamens inserted on the perianth	105.
103.	Flowers very irregular	ix. *Polygalaceæ.*
	Flowers regular	104.
104.	Leaves stalked, with netted veins; petals ¼-¾ in. long, only adhering to one another by their margins	vii. *Pittosporaceæ.*
	Leaves with broad sheathing bases, veins parallel; corolla gamopetalous, usually under ½ in., sometimes falling off in the form of a hood	xlv. *Epacridaceæ.*
105.	Stamens 10; corolla ¼ in. long, bell-shaped	xliv. *Ericaceæ.*
	Stamens 5 or fewer	106.
106.	Leaves with parallel veins, or at least without a distinct midrib, entire, often narrow	xlv. *Epacridaceæ.*
	Leaves with a midrib and netted veins, entire or lobed...	107.
107.	Leaves large, coarsely lobed, flowers about 1 in. long	liv. *Solanaceæ.*
	Leaves entire or slightly toothed	108.
108.	Leaves about 1 in. long, hairy, at least underneath	lv. *Scrophulariaceæ.*
	Leaves about 2 in. long, hairless	lvii. *Myoporaceæ.*
109.	Leaves scale-like or none	110.
	Leaves normal	112.
110.	Stamens and pistil in same flower; flowers dispersed...	111.
	Staminate flowers numerous, in terminal spikes; pistillate flowers in oblong cones	lxxi. *Casuarineæ.*
111.	Branches segmented, fleshy, succulent; flowers buried in the segments	lxi. *Chenopodiaceæ.*
	Plant wiry, parasitic; anthers valvular	lxvi. *Lauraceæ.*
	Plant erect or procumbent, branches angled or striate	lxxiii. *Santalaceæ.*
112.	Leaves toothed on the margin	113.
	Leaves with a plain margin	114.
113.	Leaves rough, 3-4 in. long, hairy beneath; flowers small, numerous, in a compound panicle	xxiii. *Rhamnaceæ.*
	Leaves rough, ½ to 1 in. long, hairless; flowers obscure, in small axillary heads; stamens and pistil on separate flowers	lxxii. *Cupuliferæ.*
	Leaves smooth, shining; flowers in terminal or lateral inflorescences	lxvii. *Proteaceæ.*
114.	Scarious stipules at the base of the leaves, sheathing the branches	lxiv. *Polygonaceæ.*
	Stipules none, or minute, never sheathing	115.
115.	Perianth and stamens evidently inserted above the ovary	116.

	Perianth and stamens inserted below the ovary, but the latter organ often absent or rudimentary	117.
116.	Perianth lid-like, thrown off at maturity; stamens numerous	xxxi. *Myrtaceæ.*
	Perianth normal; stamens 4 or 5; flowers minute	lxxiii. *Santalaceæ.*
117.	Perianth conspicuous, and usually petaloid	118.
	Perianth rather obscure, with more the appearance of a calyx	120.
118.	Small tree, with spines among the leaves; flowers white, in loose panicles	vii. *Pittosporaceæ.*
	Plant otherwise constructed; leaves sometimes acutely pointed	119.
119.	Stamens 2; perianth usually tubular, with 4 short spreading lobes, regular	lxviii. *Thymeliaceæ.*
	Stamens 4, often inserted on the tips of the perianth, which is of 4 segments, usually linear, and recurved, or very irregular	lxvii. *Proteaceæ.*
	Stamens more than 4, usually numerous, and on separate flowers to the pistil; perianth obscure, usually of 6 segments	lxix. *Euphorbiaceæ.*
120.	Leaves and flowers hairy, or covered with crystalline glands	xxxv. *Ficoideæ.*
	Plant glabrous	121.
121.	Stamens 8; flowers in loose clusters; fruit broadly winged	xxiv. *Sapindaceæ.*
	Stamens about 16; flowers solitary, and nearly sessile in the leaf-axils; fruit in 2 parts	lx. *Phytolaccaceæ.*
	Stamens 9 to very numerous; flowers conspicuously stalked or clustered; fruit 3-lobed or in 3 parts	lxix. *Euphorbiaceæ.*
122.	Flowers with a distinct calyx and corolla	123.
	Flowers with but one floral envelope	140.
123.	Petals quite free from one another	124.
	Petals more or less united	135.
124.	Stamens 4-6, usually 5	125.
	Stamens usually 8-12	128.
	Stamens very numerous	133.
125.	Ovary superior, but partially immersed, and often buried in a fleshy disk, so as to appear inferior; petals reduced to little over-arching hoods	xxiii. *Rhamnaceæ.*
	Ovary superior; petals normal	126.
	Ovary distinctly inferior	127.
126.	Flowers small, in loose panicles; fruit a coloured berry; leaves 1-2 in., oblong; stamens 2	xlviii. *Oleaceæ.*
	Flowers fairly conspicuous; fruit 1-4 follicles or nuts; leaves usually trifoliate; petals 4; stamens 4	xxi. *Rutaceæ.*
127.	Leaves large, divided	xxxviii. *Caprifoliaceæ.*
	Leaves small, linear to oblong	xxxi. *Myrtaceæ.*
128.	Leaves divided into 2 simple leaflets on a common stalk	xix. *Zygophyllaceæ.*
	Leaves entire, toothed or divided into 3 or more lobes or leaflets	129.
129.	Leaves simple, with a toothed or crenated margin	130.
	Leaves divided, or, if simple, with an entire margin	131.
130.	Flowers white, bell-shaped, solitary, on long slender stalks; fruit a berry	xvii. *Tiliaceæ.*
	Flowers green, obscure, few together, on a short stalk in the leaf-axils	xxvii. *Saxifragaceæ.*
131.	Flowers very irregular	xxv. *Leguminosæ.*
	Flowers regular	132.
132.	Perianth and stamens inferior; ovary in 4 parts	xxi. *Rutaceæ.*
	Perianth and stamens superior	xxxi. *Myrtaceæ.*
133.	Perianth and stamens distinctly superior	xxxi. *Myrtaceæ.*
	Perianth and stamens inferior or nearly so	134.

131. Leaves oblong; flowers white or pink, ½-1 in. diameter… xxvii. *Saxifragaceæ*.
Leaves mostly linear, spiney; flowers small, yellow, often in dense heads … … xxv. *Leguminosæ*.

135. Flowers ½-1 in. long, showy, and very irregular … lviii. *Labiatæ*.
Flowers regular, or very nearly so … … 136.

136. Leaves 1-2 lines long, pale, silky, closely overlapping in 2 opposite rows … … liii. *Convolvulaceæ*.
Leaves 2-4 lines long, narrow, oblong, glabrous or nearly so; corolla conspicuous … … x. *Frankeniaceæ*.
Leaves usually exceeding 4 lines, generally broad … … 137.

137. Stamens 2 or 8; corolla 4-lobed, conspicuous … … 138.
Stamens 4, 5, or 6; corolla 5-lobed, or if 4-lobed inconspicuous … … 139.

138. Corolla blue or white, spreading; petals united; stamens 2. lv. *Scrophulariaceæ*.
Corolla green, white or red; petals cohering to one another; stamens 8 … … xxi. *Rutaceæ*.

139. Stamens and pistil in the same flower, the former short and enclosed in the corolla-tube, or forming a cone over the pistil; ovary superior … … xlix. *Apocynaceæ*.
Stamens and pistil on separate flowers; the former long and pendulous; ovary inferior … … xxxix. *Rubiaceæ*.

140. Flowers small, obscure, solitary to many, sessile or nearly so, axillary or terminal … … 141.
Flowers conspicuous, often showy … … 144.

141. Leaves reduced to scales; fruit in cones … … lxxi. *Casuarineæ*.
Leaves normal … … 142.

142. Leaves flat, linear; flowers in small, white, sessile clusters in the leaf-axils; the perianth and bracts rigid … … lxii. *Amarantaceæ*.
Leaves broad or cylindric, rarely flat and narrow; perianth succulent … … 143.

143. Perianth white or yellow; stamens 2; leaves flat, linear to ovate … … lxviii. *Thymeliaceæ*.
Perianth green; stamens usually 5; leaves cylindric, or, if flat, angled … … lxi. *Chenopodiaceæ*.

144. Stamens 2; flowers under ½ in., white or yellow, often clustered into heads … … lxviii. *Thymeliaceæ*.
Stamens numerous, or where absent, the pistil formed of many carpels … … 145.

145. Leaves entire; ovary inferior … … xxxi. *Myrtaceæ*.
Leaves usually toothed or divided; pistil superior … … 146.

146. Leaves shining, acutely toothed; anthers valvate; tree … lxv. *Monimiaceæ*.
Leaves dull, with a plain or obtusely-toothed margin, often divided; creeper or short simple under-shrub … i. *Ranunculaceæ*.

147. Plant 1-2 in. long, subterranean, the flower alone coming to the surface, and about ½ in. long, oblong, crimson and yellow … … lxxvi. *Burmanniaceæ*.
Plant green, growing on soil or in water … … 148.

148. Plant minute, scale-like, floating or submerged; roots abortive … … lxxxiii. *Lemnaceæ*.
Plant with distinct stem and leaves … … 149.

149. Flowers minute, very numerous, in dense velvety spikes, several inches to a few feet long … … 150.
Flowers otherwise disposed … … 151.

150. Leaves flat, ¼-1 in. wide; flowers brown, obscure, water plant … … lxxxii. *Typhaceæ*.
Leaves rush-like, angled, very numerous; flowers white, herbaceous, land plant … … lxxix. *Liliaceæ*.

151. Flower and fruit enclosed in overlapping scarious bracts; perianth obscure, often absent … … 152.
Perianth of 6 equal scarious parts … … lxxxi. *Juncaceæ*.
Perianth wholly, or at least the inner whorl, herbaceous, usually conspicuous; if obscure or without a perianth never surrounded by scarious bracts … … 155.

152. Leafless, except sheaths on the stems, which are split on one side ... lxxxvii. *Restiaceæ*.
Leafy, or if leafless, the sheaths on the stems not split ... 153.

153. Plant ¼ to 3 or 4 in. high: flowers in small terminal heads enclosed in 2 bracts; leaves radical ... lxxxvi. *Centrolepideæ*.
Plant otherwise constructed ... 154.

154. Plant leafy, the sheaths split throughout their length: fruit a grain ... lxxxix. *Gramineæ*.
Plant leafless or leafy, and then the leaf-sheaths entire, except in *Gahnia*: fruit a small nut, often shining ... lxxxviii. *Cyperaceæ*.

155. Water or mud plants (except *Triglochin centrocarpa*): flowers small and numerous, or few and green ... 156.
Land plants; flowers conspicuous ... 157.

156. Leaves opposite or whorled, ¼ in. long, and very numerous: flower solitary, axillary, never terminal: or the leaves long and flat, and the pistillate flower solitary, on long spiral peduncles, and the ovary ½-¾ in. long ... lxxiv. *Hydrocharideæ*.
Leaves, if opposite, distant, and exceeding ¼ in., and flowers terminal; if the flowers are on a spiral peduncle, there are usually 4 together, and the ovaries minute ... lxxxiv. *Naiadeæ*.

157. Plant densely tufted; leaves very narrow and hard: flowers in small, dense, solitary, terminal heads, with brown overlapping bracts; perianth yellow ... lxxx. *Xyridaceæ*.
Plant not so constructed ... 158.

158. Perianth inferior; if yellow, flowers numerous ... lxxix. *Liliaceæ*.
Perianth superior or partly so ... 159.
Perianth inferior: fruit of 6 radiating carpels ... lxxxv. *Alismaceæ*.

159. Flowers generally irregular: stamens combined with the style, to form a central column... lxxv. *Orchidaceæ*.
Flowers regular or nearly so; stamens distinct ... 160.

160. Flowers blue, white, or green, seldom solitary: leaves flat ... lxxvii. *Iridaceæ*.
Flowers solitary and yellow, with flat leaves, or reddish and clustered, with cylindric leaves: stamens 6 ... lxxviii. *Amaryllidaceæ*.

161. Plant bearing distinct green leaves, or, in some mosses, brown, while in *Schizæa* they are reduced to linear stalks, often with comb-like appendages ... 162.
Plant not bearing leaves, or, if portions assume that character, they are not green, or are branches in whorls at intervals, and are in both instances water-plants ... 166.

162. Spore-sacks sessile in the axils of the leaves, or hidden in the leaf-sheath ... (p. 279.) *Lycopodiaceæ*.
Spore-sacks on the back or sides of leaves, or stalked: if sessile, on a creeping stem, and not enclosed in a leaf ... 163.

163. Spore-sacks on the back or margin of leaves, or when on an apparently special process (*Schizæa*, *Ophioglossum*): the process is linear, comb-like or leaf-like ... (p. 281.) *Filices*.
Spore-sacks round or oblong, solitary and stalked, except in *Pilularia*, where they are sessile ... 164.

164. Leaves linear, 1-2 in.; spore-sacks nearly globular, sessile on the creeping stem ... (p. 291.) *Hydropterida*.
Leaves small or minute ... 165.

165. Leaves usually formed of small-celled tissue, and often with a midrib; spore-sack generally opening at a terminal orifice, never splitting into 4 spreading rays ... *Musci*.
Leaves usually of coarse cells, never with a midrib; spore-sacks splitting into 4 spreading rays ... *Hepaticæ*.

166. Plant flat, succulent, green, spreading on the ground or on trees, often with erect plates or umbrella-like processes ... *Hepaticæ*.
Plants otherwise formed ... 167.

167. Water plant, or, if on land, forming greenish jelly-like masses, or deep red or brown, velvety, thread-like covering to wood or stone … … … … … … … … … … … … … … *Algæ.*
Land plants … 168.

168. Plant leathery or fleshy, variously shaped, the spore-bearing portion usually in flat disks or spreading surfaces, or terminal round and bright-coloured heads, on branched or simple leathery stalks … … … … … … … … … *Lichenes.*
Plants of most varied consistency and shape, never green, and, when the spore-bearing portion is in the form of a disk or cup, it is not placed on an expanded frond, and where the plant is in the form of clubs, stalks, &c., they are usually fleshy, and the head is seldom distinct, and differently coloured … … … … … … … … … … … … … … *Fungales.*

THE TASMANIAN FLORA.

DICOTYLEDONS.

Order 1. *RANUNCULACEÆ.*

Pistil of numerous free 1-seeded carpels or few many-seeded carpels. Stamens numerous, free, and hypogynous. Perianth regular. Sometimes corolla absent

Climbing or erect. Leaves opposite ... . 1. *Clematis.*
Herbaceous. Leaves radical or alternate.
Petals none. Sepals petaloid.
Stem with an epicalyx ... ... 2. *Anemone.*
Stem bare . . .. 4. *Caltha.*
Petals present, usually yellow ... ... 3. *Ranunculus.*

1. CLEMATIS.

Petals absent. Sepals petaloid, usually 4. Carpels numerous. Style plumose, persistent.

Stem long, climbing.
Anthers pointed ... ... 1. *C. aristata.*
Anthers oblong, blunt ... ... 3. *C. microphylla.*
Stem with short erect branches ... ... 2. *C. gentianoides.*

1. C. ARISTATA, *R. Br.* A tall climber. Leaves divided into 3 leaflets, sometimes variegated, rarely simple or more divided. Sepals narrow, about 1 inch long. Anthers prolonged into a point. Partially diœcious. *C. coriacea* and *blanda*, Hook.
Abundant ; also extra-tropical Australia. Fl. Oct.

2. C. GENTIANOIDES, *D. C.* Prostrate or subterranean, sending up short leafy branches. Leaves oblong, entire or remotely toothed, rarely divided. Flowers as in *C. aristata*, but solitary and rather larger. *C. aristata* (partly), F. v. M.
Common. Endemic. Fl. Nov.

3. C. MICROPHYLLA, *D. C.* A tall climber. Leaves generally twice divided into threes, narrow, about ½-1 inch long. Flowers rather smaller than in *C. aristata*, pubescent. Anthers small, oblong. *C. linearifolia*, Hook.
North Coast and throughout Australia. Fl. Oct.

2. ANEMONE.

Petals absent. Sepals petaloid. Carpels numerous. Style persistent, curled at apex. An epicalyx close under or remote from the flower.

A. CRASSIFOLIA, *Hook.* Small perennial. Leaves long-stalked, 3-5 lobed or divided, coarsely toothed, 1-2 inches diameter. Flower solitary, white, 1-1½ inch diameter. Sepals oblong, about 6-8.
Black Bluff, Zeehan, La Perouse, and range west of Adamson's Peak. Fl. Dec.-Jan.

3. RANUNCULUS.

Petals present, usually 5, but often more. Sepals often deciduous, same number. Carpels numerous, 1-seeded. Style persistent, short, curved.

Flowers small, white, leaves with hair-like lobes, water plant ... ... 1. *R. aquatilis.*
Flowers yellow or pink.
  Achenes minute, rough ... ... 7. *R. parviflorus.*
  Achenes smooth.
    Flower 1 inch across. ... ... 2. *R. gunnianus.*
    Flower under 1 inch.
      Hairy-tufted.
        Sepals erect. ... ... 5. *R. lappaceus.*
        Sepals reflexed ... ... 6. *R. hirtus.*
      Smooth, or nearly so, often stoloniferous.
        Leaves divided or broad ... ... 3. *R. rivularis.*
        Leaves filiform, or with one pair of filiform lobes ... ... 4. *R. millani.*

1. R. AQUATILIS, *Linn.* Spreading in water or on mud. Leaves mostly divided into numerous branched capillary segments. Flowers axillary-stalked. Petals small, white. Achenes transversely wrinkled. Style very short.

Lake River, South Esk, Jordan, &c., principally in North and East. Victoria, South Australia, Northern Temperate Zone. Fl. Oct.-Dec.

2. R. GUNNIANUS, *H.* Tufted perennial. Leaves often long-stalked, laminæ divided into numerous deeply-cut broad lobes, or entirely divided, and the lobes again divided into linear segments, gland-tipped. Peduncle short or long, normally 1-flowered and leafless. Flower 1 inch diameter, yellow or pinkish. Sepals and petals very similar, often numerous. Style of the achene straight.

On many mountain-tops: also in Victoria and New South Wales. Fl. Dec.

3. R. RIVULARIS, *Banks et Sol.* Very variable, glabrous, or nearly so, creeping and tufted at the nodes. Leaves stalked, divided in 3-7 lobed or simple segments that vary from linear to cuneate, gland-tipped. Peduncle long or short, usually single-flowered and leafless. Petals bright yellow, variable in size and number, with a nectary in the centre. Achenes flask-shaped. The style but slightly curved in the flower, very curved in fruit. *R. glabrifolius*, H.

Abundant in damp places; also in Australia and New Zealand. Fl. spring and summer.

Var. *inundatus.* Leaves very divided, filiform in water. *R. inundatus*, H.

Var. *inconspicuous.* Minute, hairy, leaves divided into 3 rather narrow segments. Flowers very small, buried amongst the leaves. *R. inconspicuous*, H. Sub-alpine.

Var. *nanus.* Minute, hairy, leaves as in var. *inconspicuous.* Flowers large, ½ inch across. Petals narrow, the gland below the middle. *R. nanus*, H. Generally referred to *R. lappaceus*, but it has the achenes and gland-tipped leaves of *R. rivularis.* Sub-alpine.

4. R. MILLANI, *F. v. M.* Tasmanian form a small, tufted perennial. Leaves numerous, 1-2 inches long, glabrous, or nearly so, filiform entire, or with a single pair of filiform lobes. Flower small, yellow, on a peduncle ½-1 inch long, solitary. Petals and achenes as in *R. rivularis.* Very close to var. *inconspicuous* of *R. rivularis.*

Ironstone Range, in pools and on mud. Australian Alps and Mount Koscinsko. Fl. Dec.

5. R. LAPPACEUS, *Sm.* Tufted, silky, very variable. Leaf stalk long, lamina lobed, or divided into 3-5 toothed lobes or segments. Peduncle usually long, leafy, and few or one flowered. Sepals erect or spreading. Petals bright yellow, obovate, about ½ inch long. Achene with coiled style when in flower, and becoming somewhat rhomboid and compressed when in fruit.

Abundant: also throughout Australia and New Zealand. Fl. spring and summer.

> Var. *scapigerus.* Small, tufted, very hairy. Leaves usually divided into 3-5 pairs of more or less deeply segmented lobes. Peduncles erect or curved, bare or leafy. Flower single, yellow, sometimes ½ inch across, at others minute. Approaching *R. hirtus*, Banks et Sol.; *R. scapigerus*, H.; *R. pimpinellifolius*, H. Sub-alpine.
>
> Var. *subsericeus.* Tufted. Leaves on long stalks; laminæ broad, thin, entire 3-5 dentate or lobed. Flowers usually small, but variable, and on short, simple, or longer leafy stalks. *R. cuneatus*, H. Sub-alpine.

6. R. HIRTUS, *Banks et Sol.* Tufted. Leaves numerous, on long stalks, very hairy, divided into 3-5 toothed lobes. Peduncle long, leafless, 1-flowered. Flower rather small. Sepals reflexed. Petals oblong, ¼ inch long. Achenes as in *R. lappaceus*, Sm. Closely allied to and often included with *R. lappaceus*, Sm.

Very common on hills and sub-alpine situations; also New Zealand. Fl. Dec.-Jan.

7. R. PARVIFLORUS, *Linn.* Small, tufted, procumbent. Leaves orbicular, lobed, or segmented. Flowers minute, on short lateral stalks, or nearly sessile. Sepals 1-2 lines long. Petals same length, narrow. Achenes about ½ line long, with rough spines on the surface. *R. sessiliflorus*, R. Br.; *R. pumilio*, R. Br.

Very common. Throughout Australia and New Zealand. Slightly differing from the common form of the Northern Hemisphere. Fl. spring and summer.

> R. MURICATUS, *Linn.* Spreading. Leaves broad. Achenes large, spiney. South Europe.
>
> R. REPENS, *Linn.* Spreading. Leaves dark green, often with a dark centre. Achenes smooth. Europe.
>
> R. PHILONOTIS, *Ehr.* Erect, branched, slender. Torus globose. Achenes with one row of minute tubercles. Europe.
>
> R. SCELERATUS, *Linn.* Erect, branched. Torus oblong. Achenes minute, numerous. Europe.

4. CALTHA.

Petals none. Sepals petaloid, 3-8. Carpels few, containing more than one ovule.

C. NOVÆ-ZELANDIÆ, *Hook.* Small tufted perennial. Leaves radical, spreading, stalk short; lamina 1-2 inches long, broadly and bluntly oblong, the lower margin with a pair of upturned appressed lobes. Flower solitary, stalk usually nearly obsolete, sometimes lengthening. Sepals pale straw-coloured, narrow, oblong, ¼-½ inch long. Carpels about 5-8. *C. introloba*, F. v. M.

Western mountains, Ironstone Mt., Cuming's Head, Mt. Humboldt, and La Perouse. Fl. Dec.

ORDER II. *DILLENIACEÆ.*

Pistil of few or many free or slightly cohering carpels, usually 2 or more seeded. Stamens few, free hypogynous. Perianth divisions, 5.

HIBBERTIA.

Pistil of 2 or 3 free carpels, 2-6 seeded. Stamens about 12, on one side *(Pleurandra)*, or surrounding the ovary. Under-shrubs, leaves simple, flowers yellow.

- Stamens on one side. Leaf margins recurved.
  - Penduncles elongated.
    - Leaves linear, pungent ... ... 5. *H. acicularis.*
    - Leaves broad ... ... 4. *H. billardieri.*
  - Penduncles short or none.
    - Minutely scabrous or glabrous ... ... 3. *H. stricta.*
    - Hirsute. Petals narrow ... ... 2. *H. hirsuta.*
    - Softly villous. Petals broad ... ... 1. *H. densiflora.*
- Stamens surrounding the pistil.
  - Leaf margin recurved ... ... 6. *H. serpillifolia.*
  - Leaf margin flat or incurved.
    - Glabrous, erect, or diffuse ... ... 9. *H. virgata.*
    - Depressed, spreading, or erect.
      - Leaves fine terete, hairy ... ... 8. *H. fasciculata.*
      - Glabrous, procumbent ... ... 7. *H. angustifolia.*

1. H. DENSIFLORA, *F. v. M.* Procumbent or diffuse, copiously silky hairy. Leaves narrow, oblong, $\frac{1}{4}$-$\frac{1}{2}$ inch long. Flowers sessile clustered. Carpels 2. *H. sericea*, B.; *Pleurandra sericea*, H.
North Coast. South-Eastern Australia. Fl. spring and summer.

2. H. HIRSUTA, *B.* Small and procumbent, shortly hairy. Leaves linear, 2-3 lines long. Flowers sessile. Petals narrow, 3-4 lines long. Carpels 2, densely hairy. *Pleurandra hirsuta*, H.
Very common. South Australia. Fl. spring.

3. H. STRICTA, *R. Br.* Very variable in size of foliage. Branches erect. Leaves 2-8 lines, glabrous or minutely scabrous. Flowers nearly sessile. Petals $\frac{1}{2}$ inch long, obcordate. Carpels 2, villous to smooth. *Pleurandra ericæfolia*, H.
Abundant. Extra-tropical Australia. Fl. all the year.

4. H. BILLARDIERI, *F. v. M.* Erect, often climbing 8 or 10 feet. Leaves oval or obovate, flat, rough, with recurved margins. Flower-stalks slender, $\frac{1}{2}$-1 inch long. Petals broadly obcordate, $\frac{1}{4}$-$\frac{1}{2}$ inch long. Carpels 2, villous. *Pleurandra ovata*, H.
Very common. South and East Australia. Fl. spring and summer.

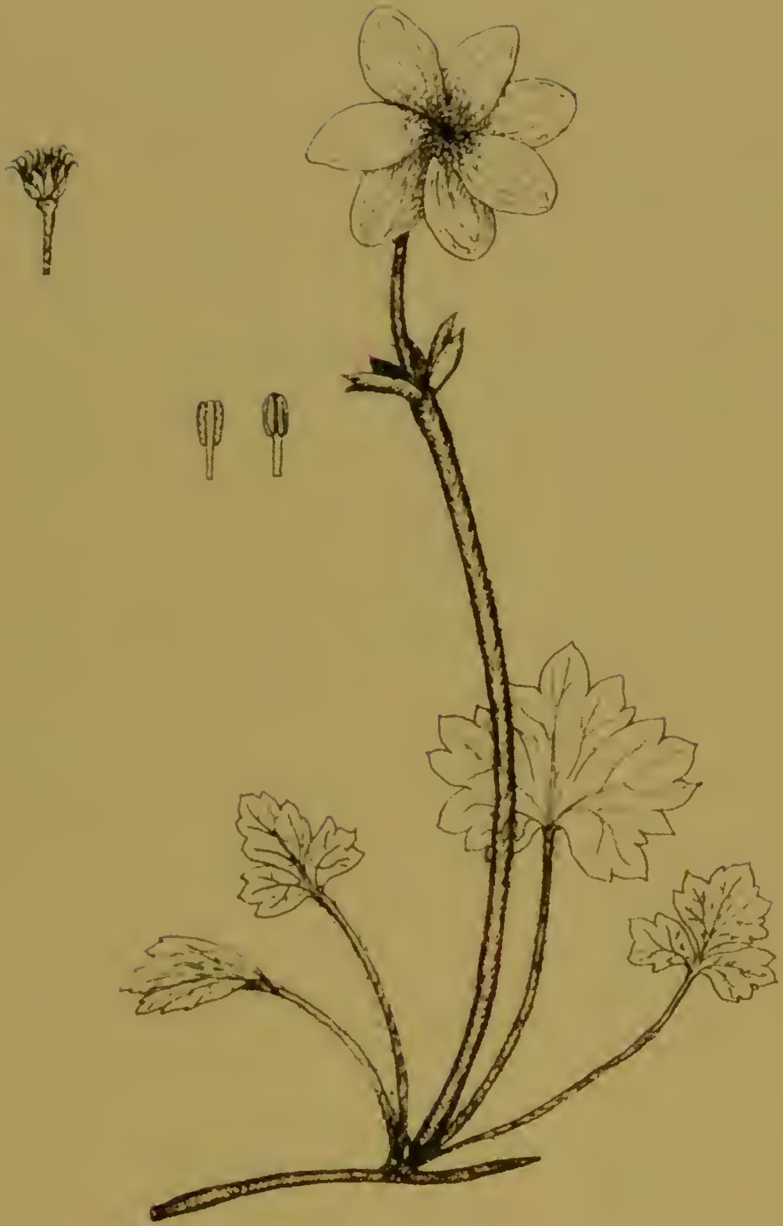
Var. *monadelphia:* More robust, erect, leaves and flowers rather larger. Bass Straits.

5. H. ACICULARIS, *F. v. M.* Slender, diffused or erect. Leaves linear, pungent, 1-4 lines long. Flower-stalk slender, $\frac{1}{4}$-$\frac{1}{2}$ inch long. Petals obovate, 2-3 lines long. Carpels 2. *Pleurandra acicularis*, H.
Common in damp, sandy places. South and East Australia. Fl. summer.

Var. *triandra.* Erect. Leaves 1 line long. George's Bay.

6. H. SERPILLIFOLIA, *R. Br.* Diffuse and nearly glabrous. Leaves linear, obtuse, 2-3 lines long, margins recurved. Flowers terminating short lateral branches. Petals 4 lines long, obcordate. Carpels 3. *H. ericæfolia*, H.
North. South-East Australia. Fl. Dec.

7. H. ANGUSTIFOLIA, *Sol.* Prostrate, glabrous or nearly so. Leaves linear, blunt, obtuse, flat, $\frac{1}{4}$-1 inch long. Flowers large. Petals $\frac{1}{2}$-$\frac{3}{4}$ inch, broadly obcordate. Carpels usually 4. *H. procumbens*, H. and B.
Abundant. Victoria. Fl. spring and summer.



ANEMONE CRASSIFOLIA. *H.*

8. H. FASCICULATA, *R. Br.* Procumbent or erect, hairy. Leaves in bunches, very narrow, often margins turned up, 2-4 lines long. Flowers as in *H. angustifolia*, only smaller. Carpels usually 3.

Very common. South and East Australia. Fl. spring and summer.

9. H. VIRGATA, *R. Br.* Diffuse or erect, glabrous, branches wiry. Leaves linear, flat, obtuse, ½-1 inch long. Flowers sessile, lateral, much smaller than in *H. angustifolia.* Petals ⅓ inch, scarcely indented. Carpels 3.

North. South-East Australia. Fl. Sept.

ORDER III. *MAGNOLIACEÆ.*

Carpels several or single, cohering or free, usually 2-many-seeded. Perianth-whorls 2, but not very distinct.

DRIMYS.

Carpels usually solitary. Fruit a berry. Sepals 2 or 3, united in the bud. Petals few.

D. AROMATICA, *F. v. M.* Glabrous shrub. Leaves alternate, oblong-lanceolate. Flowers small, unisexual, stalked, clustered, terminal. Fruit black, ⅓ inch, strongly aromatic. *Tasmannia aromatica*, R. Br.

On mountains. South-East Australia. Fl. Oct.-Nov.

ORDER IV. *PAPAVERACEÆ.*

Pistil of few united carpels, rarely of a single one. Placentas parietal. Ovules numerous. Stigmas sessile, connate, discoid. Stamens hypogynous.

PAPAVER.

Sepals 2 or 3. Petals 4 or 6. Stamens numerous.

P. ACULEATUM, *Thun.* Erect, bristly, annual. Lower leaves stalked, oblong, irregularly divided; upper ones sessile, lanceolate, toothed. Flowers small for the genus, red. Petals ½ inch long. *P. horridum*, D. C.

Avoca, George's Bay, Bass Straits. Extra-tropical Australia, Africa. Fl. Nov.-Dec.

FUMARIA OFFICINALIS, *Linn.* Pale-green, glabrous. Leaves irregular. Flowers pink, irregular. Fruit small, 1-seeded, succulent. European.

ORDER V. *CRUCIFERÆ.*

Pistil of 2 united carpels, except in Cakile, with a common ovarian cavity that is divided by a septum or replum. Ovules 1 to many, parietal. Sepals 4. Petals 4, rarely absent. Stamens normally 6.

- Pods 2-valved, equal.
  - Pods exceeding ½ inch.
    - Flower yellow ... 2. *Barbarea.*
    - Flower white or purplish ... 3. *Cardamine.*
  - Pods ¼ inch or under.
    - Pods flattened in plane of septum.
      - Leaves divided, flowers yellow ... 1. *Nasturtium.*
      - Leaves lanceolate, flowers minute ... 4. *Stenopetalum.*
    - Pods flattened at right angles to septum.
      - Carpels 2 or more seeded ... 5. *Capsella.*
      - Carpels 1-seeded ... 6. *Lepidium.*
- Pods of 2 unequal superposed parts ... 7. *Cakile.*

1. NASTURTIUM.

Pods cylindrical, short or elongated. Seeds distinctly in 2 rows.

N. PALUSTRE, *D. C.* Trailing to erect, few inches to 2 feet. Lower leaves divided into toothed lobes, upper ones simpler. Flowers yellow. Pods about 3 lines long, curved. *N. terrestre*, R. Br.

Occasionally in damp places. Temperate climates throughout the world. Fl. spring and summer.

N. OFFICINALE, *Linn.* Coarser than *N. palustre.* Flowers white. Pods longer. Europe.

2. BARBAREA.

Pods elongated, the valves having a prominent midrib. Seeds apparently in 1 row.

B. VULGARIS, *R. Br.* Erect, often 2 feet high, annual. Leaves with 6 or more toothed lobes and a larger terminal one. Flowers yellow, about $\frac{1}{3}$ inch diameter. Pods linear, 1-$1\frac{1}{2}$ inch long.

Common throughout temperate parts. Fl. spring and summer.

3. CARDAMINE.

Pod elongated, linear, compressed. Seeds apparently in a single row.

Plant coarse. Pods 1 inch or more.
  Leaves entire or toothed ... ... 1. *C. stylosa.*
  Leaves lobed or divided ... ... 2. *C. dictyosperma.*
Plant short or slender. Pods under 1 inch.
  Leaves at ends of branches only ... ... 3. *C. radicata.*
  Leaves radical or scattered ... ... 4. *C. hirsuta.*

1. C. STYLOSA, *D. C.* Tall, ascending and erect herb, often 2-3 feet. Leaves mostly toothed and broadly lanceolate, sometimes lobed, sessile, stem-clasping, 3-5 inches long. Flowers small, white, in elongating racemes. Pods rather flat, 1-$1\frac{1}{2}$ inch long. Seed pitted.

Not very common, but widely distributed. South-East Australia and New Zealand. Fl. Dec.-Feb.

2. C. DICTYOSPERMA, *Hook.* Coarse but not as tall as *C. stylosa.* Leaves mostly deeply segmented into numerous obtuse lobes. Pods longer and more slender, otherwise flowers and fruit similar.

Very common. South-East Australia. Fl. Nov.-Apr.

3. C. RADICATA, *Hook.* Stems procumbent, thick, spreading, ascending at the tips. Leaves at ends of branches, stalked, obovate, toothed or lobed. Flowers rather large, in an elongating raceme. Pods $\frac{3}{4}$ inch long and 2 lines wide. Seeds compressed.

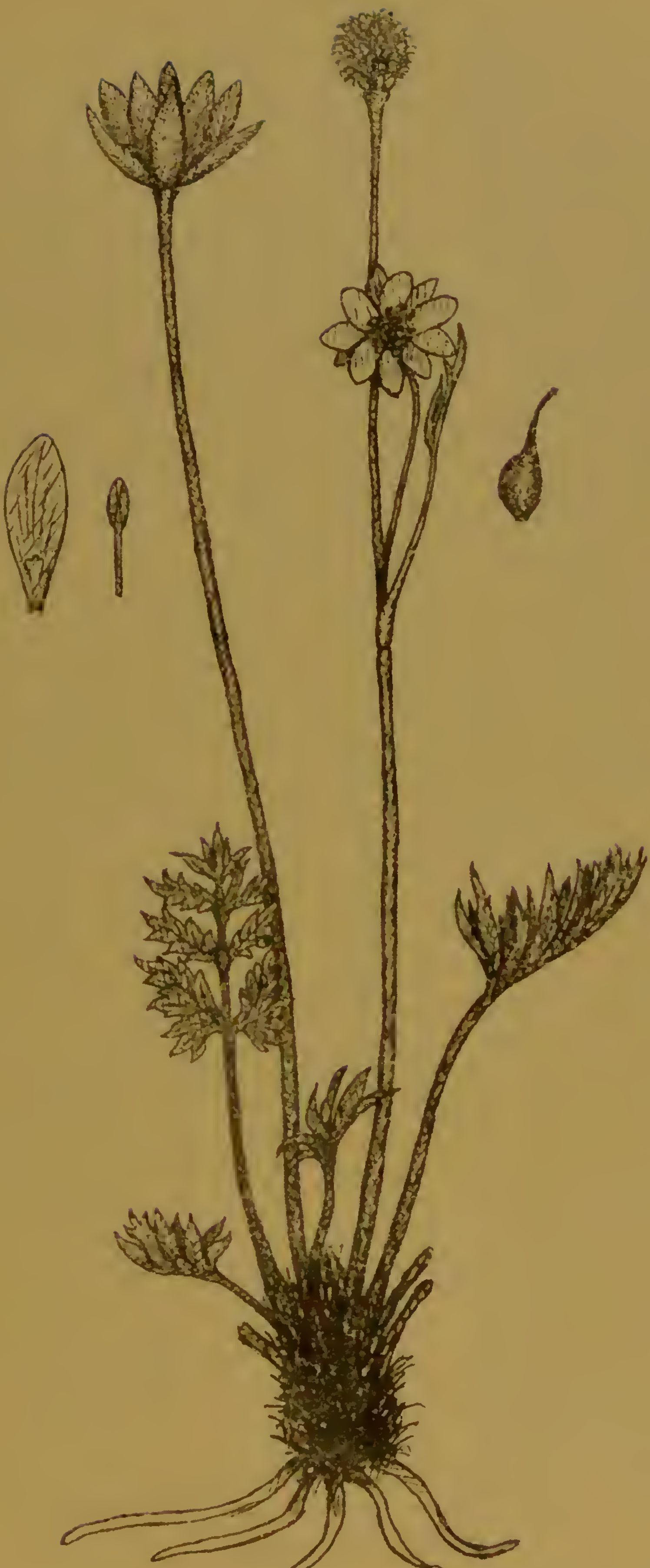
Mt. Humboldt, Mt. Olympus, and near La Perouse, in crevices of basalt. Fl. Dec.

4. C. HIRSUTA, *Linn.* A tufted or ascending herb, about 2-8 inches. Leaves with few small, paired lobes and a larger broad terminal one, sometimes reduced to the latter. Flowers small and white. Stamens often 4. Pod $\frac{1}{2}$-$\frac{3}{4}$ inch long, very slender. Seeds smooth, orbicular.

Abundant. Throughout temperate climates. Fl. Nov.-Mar.

Var. *tenuifolia.* Ascending, slender. Flowers white and purple, larger than the type. *C. pratensis*, H.; *C. tenuifolia*, B.

Var *parviflora.* Very small and slender. Leaves with few distant lobes. Flowers minute.



RANUNCULUS GUNNIANUS. *H.*

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4. STENOPETALUM.

Pods oblong, flattened, valves flattened, many seeds in 2 rows.

S. LINEARE, *R. Br.* Slender, erect, annual, often 8-12 inches. Leaves mostly linear. Racemes elongating. Flowers very small. Petals small, tapering. Pod 2 lines long, ½-¾ lines broad.
South Esk R., Bellerive. Extra-tropical Australia. Fl. Nov.-Dec.

> DRABA MURALIS, *Linn.* Small, tufted. Leaves radical, oblong, toothed. Flowers racemed, minute, white. Pod oblong, many-seeded, valves flattened. Europe.
>
> SENEBIERA CORONOPUS, *Poir.* Spreading, pale green. Leaves much divided. Flowers in compact heads. Pods small, valves doubled, 1-seeded, corky and rough. Europe.
>
> SENEBIERA DIDYMA, *Pers.* Similar but slighter. Leaves more divided. Flowers smaller, and fruit less corky. Europe.

5. CAPSELLA.

Pods compressed at right angles to the septum so that their sides approximate. Seeds several in 2 rows.

Pods ovate. Plant glabrous ... ... 1. *C. elliptica.*
Pods ovate. Plant villous ... ... 2. *C. antipoda.*
Pods very flat. Valves keeled ... ... 3. *C. tasmanica.*

1. C. ELLIPTICA, *Mey.* Decumbent, spreading annual, lower leaves ovate, segmented, upper ones linear and entire, about 1 inch long. Flowers very small, racemed. Pod ovate, valves very convex, seeds about 10 in each cell. *C. procumbens*, B.; *Hutchinsia procumbens*, H.
Blackman's R. Common to Australia and Northern Hemisphere. Fl. Nov.-Feb.

2. C. ANTIPODA, *F. v. M.* Very similar but smaller, minutely villous and pod less compressed. Seeds few in each cell. *C. australis*, B.; *Hutchinsia australis*, H.
Common on dry hills in the north. Victoria. Fl. Nov.-Feb.

3. C. TASMANICA, *F. v. M.* Small, slender, erect, annual, 1-3 inches high, sprinkled with stellate hairs. Radical leaves stalked, ovate, entire, 2-3 lines long; stem-leaves narrower, longer, and sessile. Flowers small, white, racemed. Pod obovate, very flat, valves strongly keeled, 3 or 4 seeds in each cell. *Thlaspi tasmanicum*, H.
Arthur Lake. Fl. Dec.

> C. BURSA-PASTORIS, *D. C.* Leaves radical, tufted, obovate, lobed. Pods very flat, inversely triangular. Europe.

6. LEPIDIUM.

Pods compressed at right angles to the septum, valves keeled or winged, 1 seed in each cell.

Leaves oblong-cuneate ... ... 1. *L. foliosum.*
Leaves linear, or nearly so ... ... 2. *L. ruderale.*

1. L. FOLIOSUM, *Des.* A straggling sea-coast plant. Leaves mostly obcuneate and toothed, sometimes linear, entire or segmented, ½-2 inches long. Flowers small in terminal or lateral racemes. Petals minute. Pods ovate, flat, with a slight wing. *L. cuneifolium*, D. C.
Common on sea-coast. Temperate Australia. Fl. Nov.-Dec.

2. L. RUDERALE, *Linn.* Erect, branched, wiry, annual, 6 inches to 2 feet, leaves linear, lower ones divided, upper ones entire. Racemes greatly elongating. Flowers very small, no petals, and 2 stamens. Pods small, flat, ovate, slightly winged.

Very common throughout Australia and Europe. Fl. Nov.-Dec.

L. CAMPESTRE, *R. Br.* Erect, simple. Pods with a broad wing-like expansion above. Europe.

L. DRABA, *Linn.* Pale green. Flowers white in a flat raceme, elongating. Pod not winged. Europe.

SISYMBRIUM OFFICINALE, *Scop.* Leaves rough, lobed. Flowers small, yellow. Pods broadly linear, pressed against the stem. Europe.

BRASSICA SINAPISTRUM, *Bois.* Similar to the last, but flowers large, and the pods spreading. Europe.

7. CAKILE.

Pod oblong, of 2 superposed articles, the upper one mitre-shaped, and containing 1 seed, the lower one smaller and barren.

C. MARITIMA, *Scop.* Robust and spreading, annual, 1-2 feet. Leaves pale, fleshy, spathulate. Flowers lilac, in an elongating raceme. Pods nearly 1 inch long.

Sea-coast. South and East Australia, England, and Mediterranean. Fl. Nov.-Jan.

RESEDACEÆ (alien).

RESEDA LUTEOLA, *Linn.* Tall, stiff, seldom branched, herb about 2 feet. Leaves lanceolate, 2-3 inches. Flowers in a long dense spike, yellow-green.

R. ALBA, *Linn.* Smaller than *R. luteola.* Leaves with linear lobes. Flowers white. Europe.

ORDER VI.—*VIOLACEÆ.*

Pistil of 3 blended carpels. Placentas parietal. Stamens 5, hypogynous, Anthers appressed. Corolla often irregular.

Herbs. Corolla irregular ... ... 1. *Viola.*
Shrub. Corolla regular... ... ... 2. *Hymenanthera.*

1. VIOLA.

Sepals 5. Petals 5, unequal, lower one spurred. Fruit a 3-valved capsule.

Leaves tapering at the base.
  Flowers small, leaves reniform or rhomboid ... 1. *V. hederacea.*
  Flowers large, leaves longer than broad ... ... 2. *V. betonicæfolia.*
Leaves abrupt or cordate.
  Flowers pale violet. Stipules adnate ... ... 3. *V. cunninghami.*
  Flowers white. Stipules free ... ... 4. *V. caleyana.*

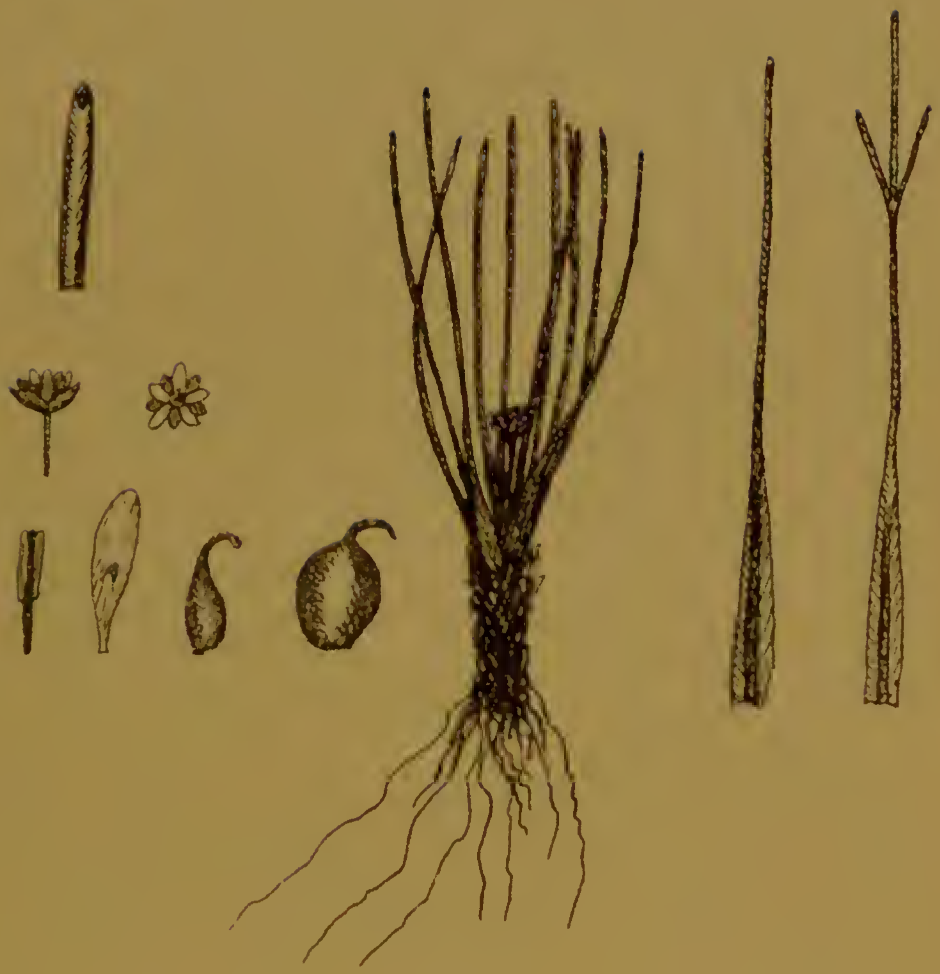
1. V. HEDERACEA, *Lab.* Small, tufted, and creeping. Leaves stalked, reniform. Flowers white to blue, spur very slight.

Abundant. Extra-tropical Australia. Fl. spring and summer.

Var. *sieberi.* Leaves rhomboid. Petals minute.

2. V. BETONICÆFOLIA, *Sm.* Tufted and creeping. Leaves stalked, 1-2 inches long, ovate to spathulate. Flowers deep violet, large, spur short

Common. Extra-tropical Australia. Fl. Nov.-Mar.



RANUNCULUS MILLANI *F. v. M.*

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3. V. CUNNINGHAMI, *H.* Tufted and creeping. Leaves stalked, about ½-inch diameter, reniform to orbicular. Stipules short, adnate, pointed. Flowers pale violet, spur short.
Western mountains, Cuming's Head. New Zealand. Fl. Dec.

4. V. CALEYANA. *Don.* Stem weak, decumbent. Leaves stalked, broadly cordate, about 1 inch long. Flowers small, white; spur short and thick.
Deloraine and East Coast. South-East Australia. Fl. Nov.-Jan.

2. HYMENANTHERA.

Sepals 5. Petals 5, nearly equal, short. Anthers nearly sessile. Placentas usually 2 only, and each 1-seeded. Fruit small, baccate.

H. BANKSII, *F. v. M.* A rigid, branched, often spiney shrub. Leaves about 1 inch, linear, oblong, obtuse. Flowers small, nearly sessile, often unisexual, solitary, or few together. *H. dentata*, R. Br.; *H. angustifolia*, R. Br.
Common; also South-East Australia and New Zealand. Fl. Nov.-Dec.

ORDER VII.—*PITTOSPORACEÆ.*

Pistil of 2, rarely more, carpels. Placentas parietal. Stamens 5, hypogynous. Petals 5, often cohering. Sepals 5, often shed very early.

Tall shrub. Fruit broad. Seeds viscid	1. *Pittosporum.*
Spiney shrub. Fruit flat	2. *Bursaria.*
Very small under-shrub. Fruit succulent	3. *Marianthus.*
Climber. Fruit a large berry	4. *Billardiera.*

1. PITTOSPORUM.

Petals loosely cohering. Fruit capsular. Seeds numerous viscid.

Flowers terminal. Leaves glabrous	1 *P. undulatum.*
Flowers scattered. Leaves tomentose beneath ...	2. *P. bicolor.*

1. P. UNDULATUM, *And.* Tall tree. Leaves stalked, oval, glabrous, 3-6 inches. Flowers in terminal clusters, ½-inch long, usually white.
Arthur R. (Emmett), one tree only found. Eastern Australia. Fl. Oct.-Nov.

2. P. BICOLOR, *H.* Small erect tree. Leaves oblong to linear, 1-2 inches, rusty, tomentose beneath. Flowers mostly in axillary clusters, yellow to red-brown, ¼ inch long.
Abundant. Victoria and New South Wales. Fl. Oct.-Nov.

2. BURSARIA.

Petals free. Sepals falling before the flower expands. Fruit a flat capsule, opening at the edges. Seeds few, flat, reniform.

B. SPINOSA, *Cav.* Tall, wiry, spiney shrub. Leaves oblong to spathulate, ½-1 inch. Flowers small, white, numerous in panicles. Capsule ¼-½ inch diameter.
Abundant. Throughout Australia. Fl. Nov.-Jan.

3. MARIANTHUS.

Petals partially united. Sepals persistent. Fruit a slightly flattened succulent capsule.

M. PROCUMBENS, *B.* A small erect or decumbent under-shrub, 3-6 inches. Leaves linear, ¼ inch. Flowers white and pink, at ends of branches. Sepals slender. Petals 2 lines long, narrow, cohering at the base. *Bursaria procumbens*, H.
Common. Eastern Australia. Fl. Sept.-Oct.

4. BILLARDIERA.

Petals long and cohering to one another. Sepals persistent. Fruit a berry.

Style long. Berry coloured and swollen ... ... 1. *B. longiflora.*
Style short. Berry green, oblong ... ... 2. *B. scandens.*

1. B. LONGIFLORA, *Lab.* A twining climber. Leaves narrowly to broadly elliptical, rarely lobed, about $\frac{3}{4}$-1 inch, rarely linear. Flowers solitary, stalked, usually pendulous, dull yellow or blue. Sepals very acute, about 2 lines long. Petals about 1 inch, cohering into a tubular corolla. Style as long as the corolla. Berry swollen about $\frac{3}{4}$ inch, blue, white, or red. *B. macrantha*, H.

Very common in woods; also South-East Australia. Fl. Oct.-Jan.

> Var. *alpina.* Stunted. Leaves obovate, lanceolate, 2-5 lines. Sepals 1 line, obtuse. Petals, 3 lines, not cohering, blue. Berry 3-4 lines. Style very short.

2. B. SCANDENS, *Sm.* Similar to *B. longiflora.* Leaves sometimes 2 inches. Petals usually not cohering. Berry oblong, usually green or yellow, sometimes red. *B. mutabilis*, H.

Distributed in the north; also in Eastern Australia. Fl. Oct.

ORDER VIII. *TREMANDRACEÆ.*

Carpels 2, united. Ovaries distinct. Fruit a flattened capsule. Petals and sepals equal, 4 or 5. Stamens 8 or 10, discharging through a terminal bore.

TETRATHECA.

Petals 4. Stamens 8. Seeds 1 or 2 in each ovary. Small under-shrubs.

Leaves broad, whorled ... ... 1. *T. ciliata.*
Leaves broad, rough ... ... 2. *T. glandulosa.*
Leaves linear, revolute, smooth or hispid ... ... 3. *T. pilosa.*

1. T. CILIATA, *Lind.* Erect, 2-3 feet. Leaves broad, flat, $\frac{1}{2}$ inch, mostly in whorls. Flowers solitary, axillary, shortly stalked, fairly numerous. Sepals small and broad. Petals red-purple, spreading, broad, $\frac{1}{2}$ inch long.

North Coast. Southern Australia. Fl. Sept.-Dec.

2. T. GLANDULOSA, *Lab.* Erect, 1-2 feet, glandular, hispid. Leaves oblong, toothed, shortly stalked, $\frac{1}{4}$-$\frac{1}{2}$ inch. Flowers white, pink to purple, rather smaller, but similar to *T. ciliata.* *T. ericifolia*, Sm. (partly).

Abundant. South-East Australia. Fl. spring and summer.

3. T. PILOSA, *Lab.* Erect, 1-2 feet, glabrous, or sometimes hispid. Leaves $\frac{1}{4}$-$\frac{3}{4}$ inch, linear, margins revolute, glabrous, rarely coarsely hispid. Flowers similar to but smaller than *T. glandulosa.* *T. ericifolia*, Sm. (partly).

Very common. South and East Australia. Fl. spring and summer.

> Var. *calva.* Slender, usually glabrous. Leaves about 2 lines. Flowers very small, mostly white. *T. procumbens* and *T. gunnii*, H.

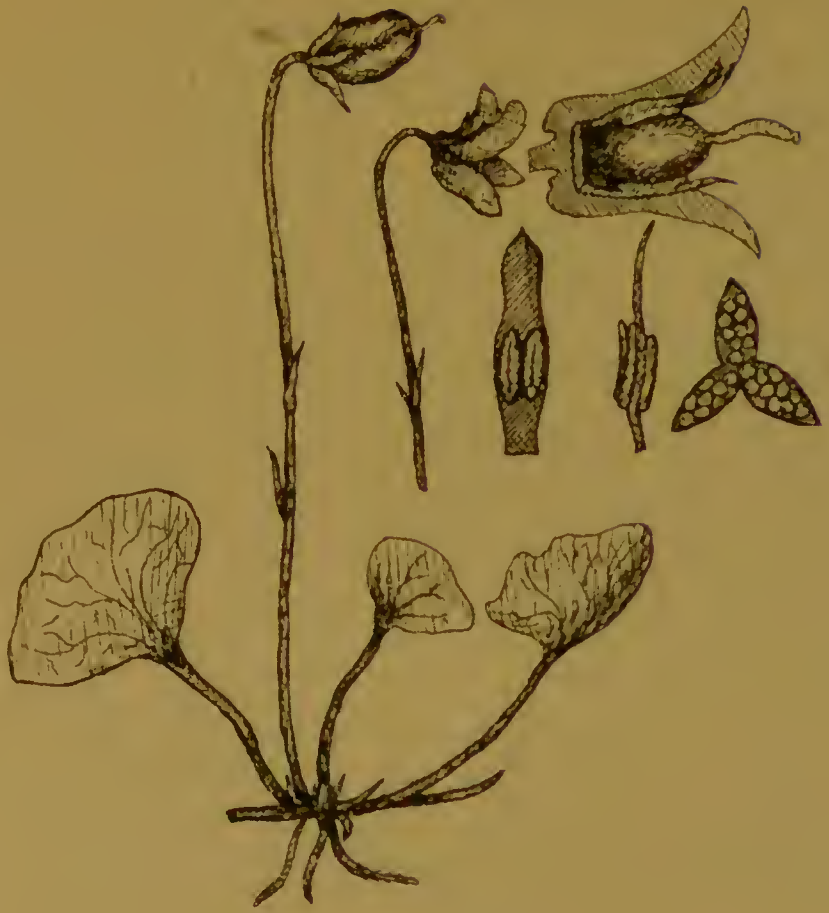
ORDER IX.—*POLYGALACEÆ.*

Carpels 2, united. Ovaries distinct. Style single. Perianth irregular.

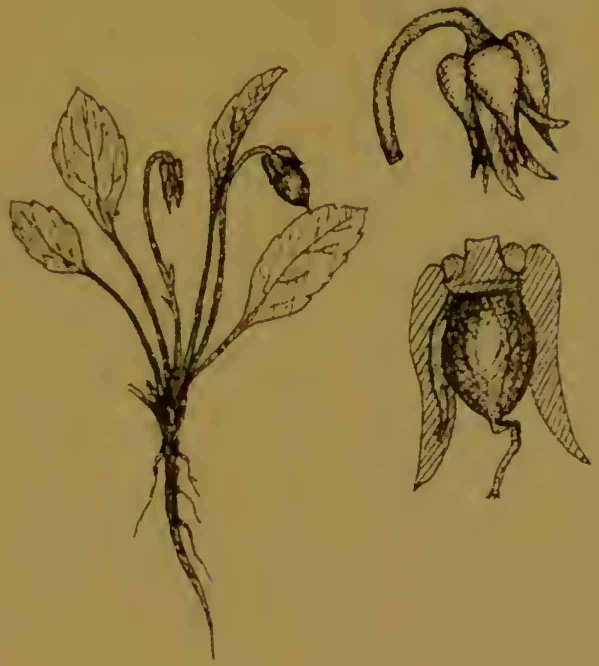
COMESPERMA.

Sepals 5, unequal, 2 are broad and petaloid. Petals 3, unequal, lower one folded as a keel. Stamens 8, filaments combined. Fruit capsular, narrowed at the base. Seeds numerous, hairy.

Twining climber... ... ... 1. *C. volubile.*



VIOLA HEDERACEA. *Lab.*



VIOLA HEDERACEA. *Var. sieberi.*

John Vail, Government Printer, Tasmania

Stem erect.
Tall shrub. Leaves obtuse ... ... 2. *C. retusum.*
Shrub. Leaves with a recurved point ... ... 3. *C. ericinum.*
Short, twiggy. Leaves with straight point ... 4. *C. calymega.*
Short, slender. Leaves few, or none ... ... 5. *C. defoliatum.*

1. C. VOLUBILE, *Lab.* A small twining climber. Leaves few, oblong to linear. Flowers numerous, blue, white, or red, about $\frac{1}{4}$ inch.
Very common. Extra-tropical Australia. Fl. Oct.-Feb.

2. C. RETUSUM, *Lab.* An erect or spreading shrub. Leaves oblong to linear, flat, obtuse, $\frac{1}{4}$ inch. Flowers terminal, numerous, red or pink, about $\frac{1}{4}$ inch. Common. Eastern Australia. Fl. Nov.-Dec.

3. C. ERICINUM. *D. C.* Branches simple, erect, or spreading from a woody base, 2-3 feet. Leaves linear, margins revolute, apex recurved, $\frac{1}{2}$ inch. Flowers terminal, numerous, blue, pink, or white, similar to *C. retusum.*
Florentine Valley, many parts in north. Eastern Australia. Fl. Nov.-Dec.

4. C. CALYMEGA, *Lab.* Base woody, branches erect, twiggy, a few inches high. Leaves oblong, linear, $\frac{1}{3}$ inch, pointed. Flowers rather small, in a lengthening raceme, usually pale blue.
Widely distributed, but not common. Temperate Australia. Fl. Dec.-Jan.

5. C. DEFOLIATUM, *F. v. M.* Base woody, branches slender, twiggy, a few inches high, appearing leafless. Leaves linear, small or minute. Flowers small, blue, in a lengthening raceme
Common in heaths Eastern Australia. Fl. Dec.-Feb.

ORDER X.—*FRANKENIACEÆ.*

Carpels 2-4, united, with a common ovarian chamber. Placentas parietal. Seeds numerous. Calyx tubular, toothed. Corolla regular. Petals 4 or 5, clawed. Stamens mostly 4 or 5, hypogynous. Fruit capsular.

FRANKENIA.

Character that of the order.

F. PAUCIFLORA. *D. C.* Small, procumbent, spreading, perennial. Leaves linear, 1-3 lines long, opposite, clustered. Flowers solitary, sessile, terminal, white or pink. Corolla 2 lines diameter.
Circular Head, Bass Straits. Throughout Australia. Probably not distinct from *F. lævis*, Linn. Fl. Nov.-Jan.

ORDER XI.—*CARYOPHYLLACEÆ.*

Differing from *Frankeniaceæ* only in the placenta being free and central, also the sepals being sometimes free, and rarely in the corolla being suppressed. Leaves opposite.

Sub-order *Sileneæ.* Sepals united.

SAPONARIA TUBULOSA. *F. v. M.* A small erect annual, 2-4 inches. Leaves small, linear. Flowers small solitary, pink or white, stalked. George's Bay. Probably introduced by migratory birds.

SILENE GALLICA. *Linn.* Erect, sparely-branched, 6 inches to 1 foot, viscid, hairy. Leaves ovate to linear. Flowers axillary, solitary, purple to white, not conspicuous. Introduced and widely spread.

GITHAGO SEGETUM. *Desf.* Erect, usually simple, softly hairy. Leaves lanceolate. Flowers few, terminal or axillary on very long peduncles.

Sepals much exceeding the petals. Petals red, $\frac{1}{2}$-1 inch long, broad. Introduced and found occasionally in or near fields.

Sub-order *Alsineæ.* Sepals free, or nearly so.

Petals deeply notched.
Capsule protruding ... ... *Cerastium.*
Capsule included in calyx ... ... 1. *Stellaria.*
Petals entire or none.
Sepals 4 ... ... 2. *Sagina.*
Sepals 5.
Petals absent.
Plant spreading ... ... 1. *Stellaria.*
Plant densely tufted ... ... 3. *Colobanthus.*
Petals present. Stipulate.
Leaves filiform, clustered. Petals white... ... *Spergula.*
Leaves linear. Petals mostly pink ... ... 5. *Spergularia.*
Leaves oblong. Flowers very numerous ... 4. *Polycarpon.*

1. STELLARIA.

Sepals 5. Petals 5, deeply bifid, rarely suppressed. Styles 3, rarely 5. Capsule opening in 6 or 10 valves.

Petals none .. .. 4. *S. multiflora.*
Petals conspicuous.
Leaves stalked, broad.
Petals shorter than calyx, slightly pubescent ... 5. *S. media.*
Petals exceeding calyx. Plant quite glabrous ... 3. *S. flaccida.*
Leaves sessile.
Leaves pungent, narrow ovate ... ... 1. *S. pungens.*
Leaves linear to lanceolate ... ... 2. *S. glauca.*

1. S. PUNGENS, *Brong.* Decumbent, compact or somewhat spreading. Leaves $\frac{1}{4}$ inch, recurved, pungent, usually overlapping. Flowers long-stalked, solitary, axillary. Petals $\frac{1}{4}$ inch long.
Common. Temperate Australia. Fl. Dec.

2. S. GLAUCA, ***D. C.*** Generally erect, 2 inches to 2 feet. Leaves linear, acute, $\frac{1}{2}$-1 inch. Flowers long-stalked in the terminal axils. Petals $\frac{1}{4}$ inch long. *S. palustris*, Retz.
Found occasionally, chiefly in central and northern parts; also throughout the world. Fl. Nov.-Dec.

3. S. FLACCIDA, *Hook.* A very spreading, decumben perennial. Leaves ovate to lanceolate, acute, narrowed at the base, about $\frac{1}{2}$ inch long, and usually more or less stalked. Flowers solitary, stalked in the axils of the leaves. Sepals under $\frac{1}{4}$ inch, broadly lanceolate, acute. Petals rather longer, deeply cleft. *S. media*, Hook.
Common in damp, shaded places. Found also in New South Wales and Victoria. Fl. spring and summer.

4. S. MULTIFLORA, *Hook.* A small annual, with a decumbent to erect habit. Leaves narrow, mostly sessile, about $\frac{1}{4}$ inch long. Flowers axillary, on stalks of varied length. Sepals narrow, acute, under $\frac{1}{4}$ inch long. Petals absent.
Common. Distributed in Southern Australia Fl. spring and summer.

5. S. MEDIA, ***D. C.*** A weak, spreading annual. Leaves ovate, pointed, usually stalked, from $\frac{1}{2}$-$\frac{3}{4}$ inch long. Stems with a single line of hairs connecting the nodes. Flowers stalked, mostly towards the ends of the branches. Sepals under $\frac{1}{4}$ inch, blunt Petals deeply cleft, mostly shorter than the sepals.

An introduced weed that has spread with cultivation to nearly all parts of the world. Fl. all summer.

2. SAGINA.

Small tufted herbs. Petals small or absent. Stamens usually as many as the petals, 4 or 5. Capsule opening with as many valves as there are styles.

S. PROCUMBENS, *D. C.* A small matted herb. Leaves linear, pointed. Flowers solitary, on long fine stalks arising from the leaf axils. Sepals about 1 line long, oval. Petals either very small or absent. Sepals, petals, stamens, and styles usually 4. Capsule rather longer than the sepals, splitting deeply into as many valves as there are styles. *S. apetala*, Ard.
Abundant. World-wide. Fl. from spring till autumn.

3. COLOBANTHUS.

Small tufted herbs, almost moss-like. Sepals 4 or 5. Petals absent. Stamens and styles of the same number as the sepals. Capsule opening by the same number of valves.

C. BILLARDIERI, *Fenzl.* A small, densely-tufted perennial. Leaves crowded, linear, pointed, ½-1 inch long. Flowers solitary, terminal, on stalks usually longer than the leaves. Sepals 5, 2 lines long, finely pointed. Capsule ovoid, about the length of the calyx.
Common in sandy coasts. Victoria. Fl. Nov.

4. POLYCARPON.

Leaves often nearly whorled. Sepals 5. Petals 5. Stamens 3-5. Style very short, trifid.

P. TETRAPHYLLUM, *D. C.* Small, prostrate, clustered, annual. Leaves obovate, about 2 lines. Flowers very numerous, small, terminal. Sepals 1 line. Petals shorter. Capsule opening in 3 valves.
Very common. Temperate regions throughout the world. Fl. Oct.

5. SPERGULARIA.

Sepals 5. Petals 5. Stamens mostly 10. Styles 3, rarely more.

SPERGULARIA RUBRA, *Pers.* Small, decumbent, tufted. Leaves linear, ½ inch, with scarious stipules. Flowers few, stalked, axillary, pink or white. Petals oval, 1-3 lines long.
Common. Most parts of the world.

Var. *marina.* Larger and fleshy, leaves often 1-2 inches. Sea-coasts. Fl. spring and summer.

SPERGULA ARVENSIS, *D. C.* Slender. Leaves filiform, clustered, 1 inch. Flowers white on recurved stalks. Introduced. Common.

CERASTIUM GLOMERATUM, *Thu.* Leaves broad, hairy. Flowers numerous, terminal. Capsule protruding. Introduced.

ORDER XII.—*PORTULACACEÆ.*

Pistil of 3 blended carpels with a common ovarian cavity, in a few cases not entirely free from the floral tube. Placenta centre. Ovules few. Sepals 2. Petals 5 or more.

Petals free.
  Stamens 5. Petals spreading ... ... 1. *Claytonia.*
  Stamens seldom 5. Petals usually remaining erect 2. *Calandrinia.*
Petals united ... ... 3. *Montia.*

1. CLAYTONIA.

Petals 5. Stamens 5, opposite and somewhat adhering to the petals. Pistil quite superior. Fruit capsular.

A common genus of the Northern Hemisphere, but one species in the Southern.

C. AUSTRALASICA, *H.* A small creeping and tufted perennial. Leaves alternate, linear to spathulate, often fleshy in alpine swamps, 1-3 inches long, insertion broadened, scarious, and sheathing. Flowers solitary or few, pink or white, long stalked. Petals 2-4 lines long, spreading.

Very common marsh plant; also extra-tropical Australia and New Zealand. Fl. spring and summer.

2. CALANDRINIA.

Petals usually 5. Stamens usually exceeding the petals in number, and when they agree they do so inconsistently.

A large genus of the warmer parts of both Hemispheres. Artificially distinct from *Claytonia*, with which von Mueller unites it.

Flowers on comparatively long stalks. Sepals broad,
but pointed ... ... 1. *C. calyptrata.*
Flowers short-stalked. Sepals blunt... ... ... 2. *C. pygmæa.*

1. C. CALYPTRATA, *H.* A small annual, decumbent or ascending, 2-8 inches. Leaves succulent, linear to spathulate, alternate, $\frac{1}{2}$-2 inches long, base not sheathing. Flowers long-stalked, not numerous, in long irregular racemes. Sepals broad, pointed. Petals 1-2 lines long, erect, persistent, often 5, but not consistently so. Stamens variable in number, often 5. *Claytonia calyptrata*, F. v. M.

Common in dry but somewhat shaded places, apparently preferring basaltic rocks; also throughout extra-tropical Australia. Fl. spring and summer.

2. C. PYGMÆA, *F. v. M.* A small decumbent or ascending annual, seldom exceeding 1 inch. Leaves very fleshy, oblong, 2-4 lines long. Flowers few, short-stalked, appearing terminal. Sepals fleshy, obtuse, enlarging round the fruit, Petals 1-2 lines long, erect, usually 5-7. Stamens, varying in number, usually more numerous than the petals. *Claytonia pygmæa*, F. v. M.

Pleasant-Boat Harbour, near George's Bay; also Victoria, South and West Australia. Fl. Oct.-Nov.

3. MONTIA.

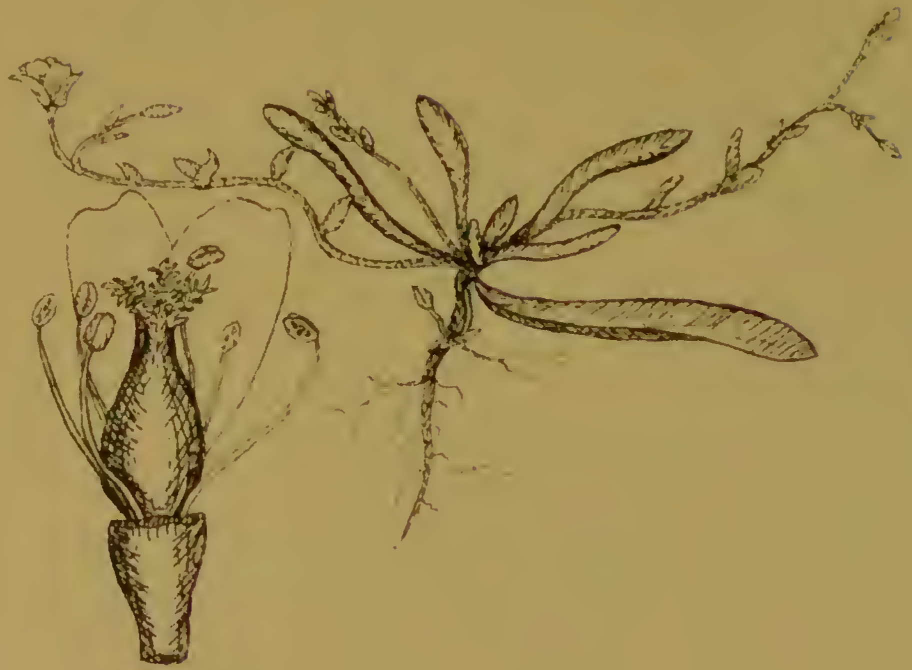
Petals 5, united at the base, except at one place. Stamens usually 3, inserted on the corolla.

M. FONTANA, *Linn.* A small succulent, spreading annual, 1-4 inches. Leaves mostly opposite, oblong to spathulate, 2-6 lines long, narrowed, and semi-stem-clasping. Flowers axillary, stalked. Sepals very obtuse, under 1 line. Corolla slightly longer.

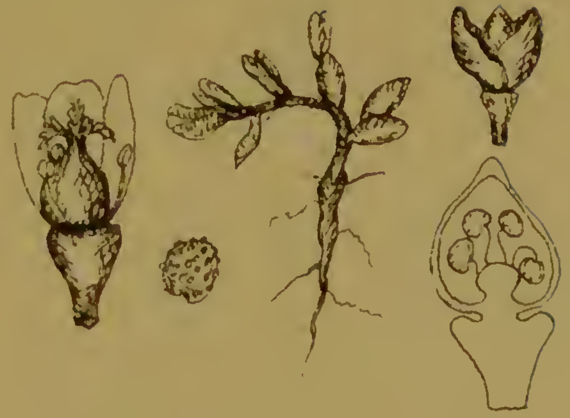
Common in damp situations in many parts of the Island, but overlooked; also occurs in Victoria, New South Wales, New Zealand, and most temperate localities in both Hemispheres. Fl. Oct.-Feb.

ORDER XIII.—*ELATINACEÆ.*

Pistil of three blended carpels, but each ovarian cavity closed. Ovules many, on axillary placentas. Flowers regular, the members hypogynous. Sepals 2-5. Petals similar. Stamens the same, or twice as many. Fruit capsular.



CALANDRINIA CALYPTRATA. *H*



CALANDRINIA PYGMŒA. *F. v. M.*

[illegible] Printer Tasmania

ELATINE.

Sepals, petals, and stamens usually 3.

E. AMERICANA, *Arn.* Small, creeping, usually densely tufted, annual. Leaves opposite, broad, mostly oblong, obtuse, about 2 lines long. Flowers minute, sessile, solitary, axillary. Sepals very small. Transparent petals still smaller, and lost early in Tasmanian plants. *E. minima*, Fisch.

This, the common Australian form, differs somewhat from the type, and is sometimes treated as distinct, but the plant tends to vary wherever found.

Marshes in the north, central, and eastern parts. Throughout Australia, except the extreme north, New Zealand, Fiji, and North America. Fl. Oct.-Dec.

ORDER XIV. *HYPERICACEÆ.*

Pistil of 3-5 more or less united carpels. Ovarian cavities in some genera distinct, others common. Placentas axillary to parietal accordingly. Ovules many. Fruit capsular. Sepals and petals 5, rarely 4, free. Stamens very numerous, united into 3-5 bundles, hypogynous.

HYPERICUM.

Sepals 5. Petals 5. Carpels 3-5. Ovary common, but the dissepiments deeply dividing it. Leaves opposite.

Erect. Leaves subcordate 1. *H. gramineum.*
Decumbent. Leaves long 2. *H. japonicum.*

1. H. GRAMINEUM, *Forst.* Erect, slightly branching, perennial, 6-12 inches high. Leaves sessile, opposite, ovate-cordate, mostly acute, ½-¾ inch long. Flowers few, stalked, cymose or solitary, terminal. Sepals fairly broad, acute, about 3 lines long. Petals exceeding the sepals, spreading, orange-yellow. Capsule 3-valved.

Common in pastures; also throughout Australia, New Zealand, and New Caledonia. Fl. spring and summer.

2. H. JAPONICUM, *Thunb.* Much smaller than the last, prostrate, branched, with ascending ends. Leaves smaller, more obtuse, without cordate base. All parts smaller than the last, otherwise not differing.

Very common in damp situations. Victoria, South Australia, New South Wales. From Japan to New Zealand. Fl. spring and summer.

ORDER XV. *MALVACEÆ.*

Pistil of a single carpel, where more the carpels are arranged round a columnar prolongation of the torus, each 1-seeded and falling away as an indehiscent article. Flowers regular. Petals free, usually 5, hypogynous. Stamens numerous, hypogynous, united at the base round the pistil, or in a central column where that member is absent. Anthers 1-celled.

A large and well-defined order, of wide distribution, but poorly represented in Tasmania.

Flowers under ¼ inch. Carpels few ... ... 1. *Plagianthus.*
Flowers much exceeding ¼ inch.
  Involucre 3-lobed .. .. 2. *Lavatera.*
  Involucre 3-leaved .. . . 3. *Malva.*

1. PLAGIANTHUS.

Carpels 2-5, rarely less or more. Bracteoles none, or distant from the calyx. A genus confined to Australia and New Zealand.

Erect, strict herb, many feet high. Flowers numerous,
  in a leafy spike ... . 1. *P. spicatus.*

Branched shrub or tree.
  Leaf narrowed towards base ... ... 2. *P. sidoides.*
  Leaf broadest at base ... ... 3. *P. pulchellus.*

1. P. SPICATUS, *B.* Branches herbaceous, erect, strict from a hard perennial base, 2-5 feet high. Leaves from oblong to cuneate, stalked, about 1 inch long, becoming smaller and nearly sessile up the branches. Flowers very numerous, solitary, or few, in the axils of the leaves, forming a long, rather dense, leafy spike. Calyx 5-angled. Petals yellowish-white, oblong, about 3 lines long. Stamens about 15. Anthers crescent-shaped. Styles filiform. *Lawrencia spicata*, Hook.

North-eastern parts. Bass Straits, Southern Australia, and New South Wales. Fl. Feb.

2. P. SIDOIDES, *H.* A tall shrub or small tree, more or less clothed with stellate tomentum. Leaves from very broadly ovate-acuminate to narrow lanceolate, generally narrowed towards the stalk, 2-6 inches long, margin serrate or toothed. Flowers numerous in axillary racemes in the upper leaf axils. Functionally unisexual. Staminate flowers with a campanulate calyx and white spreading petals, 3 lines long. Stamens about 15. Pistillate flowers with a tubular calyx, about 1¼ line long, inconspicuous petals, abortive stamens, and 2-carpelled pistil.

Common in damp woods in Southern Tasmania. Fl. May-June.

3. P. PULCHELLUS, *Gray.* A tall shrub, or small tree, usually nearly glabrous. Leaves ovate-lanceolate, with a subcordate base, acuminate, coarsely obtusely toothed, on slender stalks. Flowers in rather loose clusters or racemes in the upper axils, functionally unisexual, being similar to those of *P. sidoides*, only the stamens much more numerous, and in the flowers with perfect pistils the calyx is globular at the base, with rather long lobes, and the pistil is 5-carpelled.

Common in northern parts of the Island; also in New South Wales and Victoria. Fl. Oct.-Nov.

> Var. *tomentosa.* Much more tomentose, and with somewhat longer styles. *P. tasmanicus*, Gray.

2. LAVATERA.

Carpels many. Column usually expanded at the apex. Bracteoles 3, united into an involucre close beneath the calyx.

A common genus in the Northern Hemisphere.

L. PLEBEIA, *Sims.* An erect perennial, often many feet high. Leaves orbicular, palmately veined, 5-lobed, margin toothed, on rather long stalks; lower ones often many inches diameter, upper ones 1 inch. Flowers solitary, or few together in the upper axils. Petals pink or pale purple, oblong, about 1 inch long. Rare.

Woolnorth, Bass Straits, New South Wales, Victoria, South Australia, West Australia, and South Queensland. Fl. Nov.-Dec.

3. MALVA.

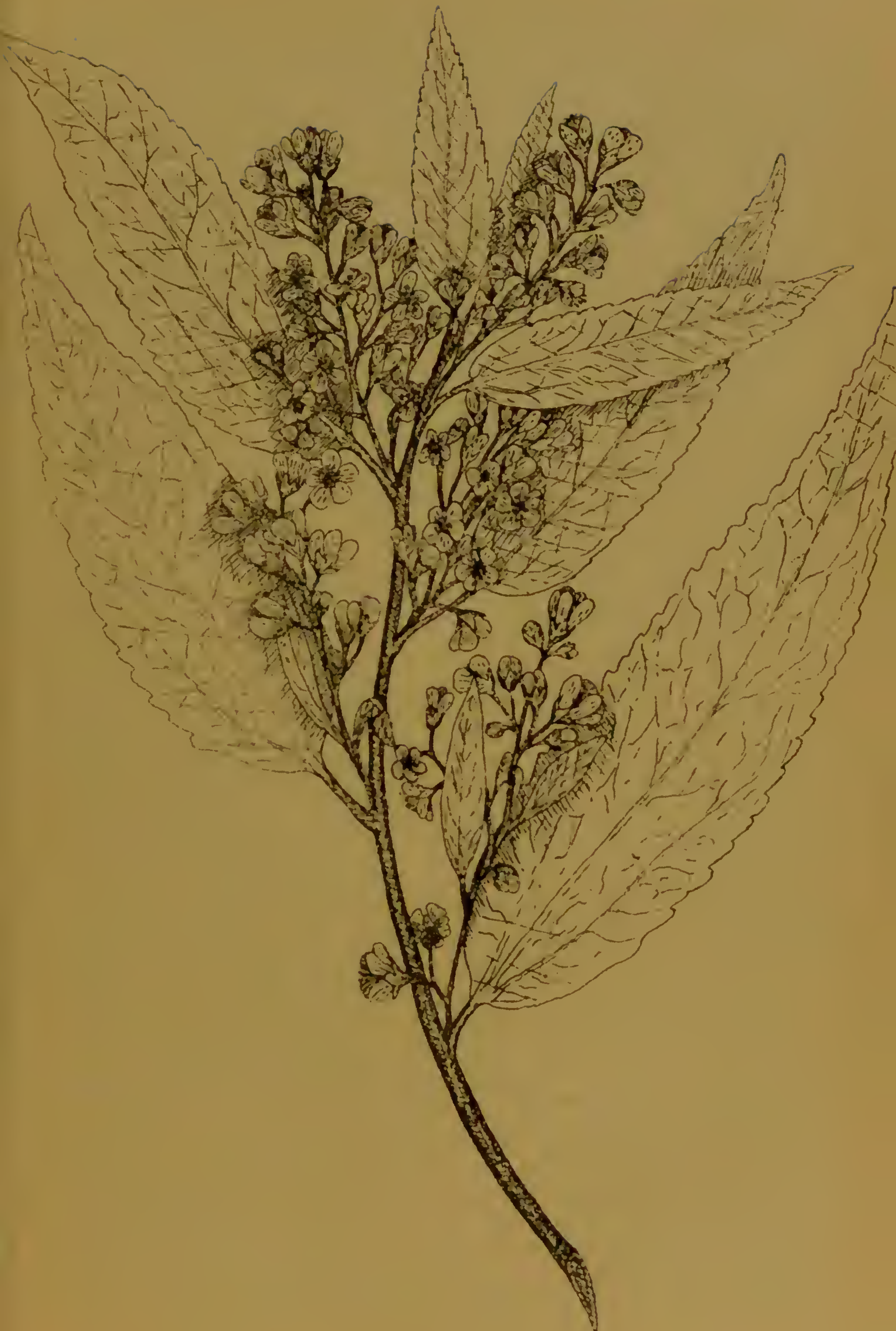
Similar in structure and habit, only the three bracteoles are free and inserted towards the base of the calyx.

> M. ROTUNDIFOLIA, *Linn.* Decumbent, leaves nearly round, irregularly and shallowly notched. Flower about ½ inch. European.

> M. SYLVESTRIS, *Linn.* Ascending. Leaves angular, more deeply notched. Flowers 1 inch. European.

ORDER XVI.—*STERCULIACEÆ.*

Pistil of few to many carpels, more or less united. The ovarian cavities distinct. Styles divided at the apex into as many branches as there are carpels, or



PLAGIANTHUS SIDOIDES. *H.*
(Male Plant.)

entire. Stamens usually 10, united in a tube (five perfect, five incomplete), sometimes five only. Calyx persistent, usually gamosepalous. Corolla seldom conspicuous, sometimes absent.

A large order, with an extensive distribution in all warm climates. In Tasmania represented by only one genus.

LASIOPETALUM.

Sepals 5, united at the base. Petals small or none. Stamens 5, opposite the petals, free or nearly so. Pistil of few carpels. The style common, undivided, 1 seed in each cell.

Leaves ovate or oblong.	
Sepals, 3-4 lines, white	1. *L. discolor.*
Sepals, 3 lines, brown	2. *L. dasyphyllum.*
Leaves narrow. Sepals brown, 2 lines .	3. *L. micranthum.*

1. L. discolor. *H.* Erect, branched shrub. Leaves ovate-cordate, alternate, 1-2 inches long, the under surface densely covered with pale stellate tomentum, stalked. Flowers in small-stalked, rather dense axillary clusters. Bracteoles and sepals rather long and pale. Petals small.

North-West Coast. South and West Australia. Fl. Nov.-Jan.

2. L. dasyphyllum. *Sieb.* Very similar in general habit to *L. discolor*, only leaves sometimes narrow, oblong. Bracteoles and sepals dark brown. *L. gunnii*, Steetz.

Schouten Island, Rocky Cape. Bass Straits, Victoria, and New South Wales. Fl. Dec.

3. L. micranthum. *Hook.* Similar to the last two, only the leaves smaller, about 1 inch long, and almost linear, with revolute margins. Bracteoles broad. Sepals narrow, 1½-2 lines long, brown.

Near Swanport to St. Paul's River. Fl. Dec.

Order XVII. *TILIACEÆ.*

Pistil of few blended carpels. Ovarian cavities distinct. Style simple, divided at the apex into as many lobes as there are carpels. Stamens usually numerous, free, inserted into a disk-like development of the torus. Sepals 3 to 5, free or slightly cohering. Petals usually as many as the sepals, sometimes absent, free or cohering.

A large order, distributed to all warm climates. Sparsely represented in Tasmania.

Flowers solitary, shrub	1. *Aristotelia.*
Flowers racemed, tree	2. *Elæocarpus.*

1. ARISTOTELIA.

Sepals 4 or 5. Petals same number, 3-lobed, inserted round the edge of the disk-like process of the torus. Stamens numerous, surrounded below by a glandular ring. Anthers linear. Ovary 2 or 4 celled, with 2 ovules in each cell. Style slender. Fruit a berry.

A genus of few species. The only Tasmanian species is endemic.

A. peduncularis. *Hook.* A straggling shrub of a few feet height. Leaves mostly opposite, shortly-stalked, oblong to lanceolate, pointed, serrated, and 2-3 inches long. Flowers white, mostly solitary, pendulous, on long stalks. Sepals about ¼ inch long, pointed. Petals about ½ inch broad, and 3-lobed. Stamens 10-12, the filaments much bent and hairy at the base. Anthers long, linear, and shortly pointed. Berry heart-shaped, about $\frac{1}{3}$ inch long, varying in colour from white to deep brown purple.

Common in many parts, in shady places on mountains. Fl. Nov.-Dec.

2. ELÆOCARPUS.

Sepals 4 or 5. Petals same number, fringed, lobed, or entire, inserted at the base of the enlarged torus. Stamens numerous, surrounded at the base by a glandular ring. Anthers linear. Ovary 2-5 celled, with 2 or more ovules in each. Style slender. Fruit a drupe, with a hard stone, only one seed maturing in each cell.

A large genus, principally tropical. The only Tasmanian representative is confined to the Australian region.

E. CYANEUS, *Ait.* A tree of moderate growth. Leaves oblong to lanceolate, mostly alternate, about 3 inches long, serrate, pointed, reticulated on the upper surface. Racemes loose, shorter than the leaves. Sepals $\frac{1}{4}$ inch long, pointed. Petals rather longer, divided into many acute lobes. Stamens numerous. Anthers linear, shortly pointed. Ovary 2-celled, with 8-10 ovules in each cell. Drupe usually 1-seeded, globular, blue, the stone $\frac{1}{4}$-$\frac{1}{2}$ inch long, rugose on the surface.

King Island. Throughout Eastern Australia. Fl. Nov.

ORDER XVIII. *LINACEÆ.*

Pistils of 3 to 5 blended carpels. Ovarian cavities distinct. Styles distinct or nearly so. Stamens usually 10 or 5, united in a ring round the pistil, hypogynous. Sepals 5 or 4, free or united. Petals same number, free.

LINUM.

Fruit capsular. Carpels easily separating when ripe, 2-seeded, and each seed isolated by a more or less complete spurious dissepiment.

L. MARGINALE. *A. Cunn.* Small, twiggy, slightly branched perennial, 1-2 feet. Leaves alternate, linear acute, $\frac{1}{2}$-1 inch long. Flowers pale blue, about $\frac{1}{2}$ inch in diameter, few or many, long-stalked, in a terminal corymb or raceme.

Very common; also throughout extra-tropical Australia. Fl. spring and summer.

L. CATHARCTICUM, *Linn.* Erect, branched. Leaves broadly linear, $\frac{1}{4}$-$\frac{1}{2}$ inch, opposite. Flowers small, white. Pastures. Introduced European.

ORDER XIX. *ZYGOPHYLLACEÆ.*

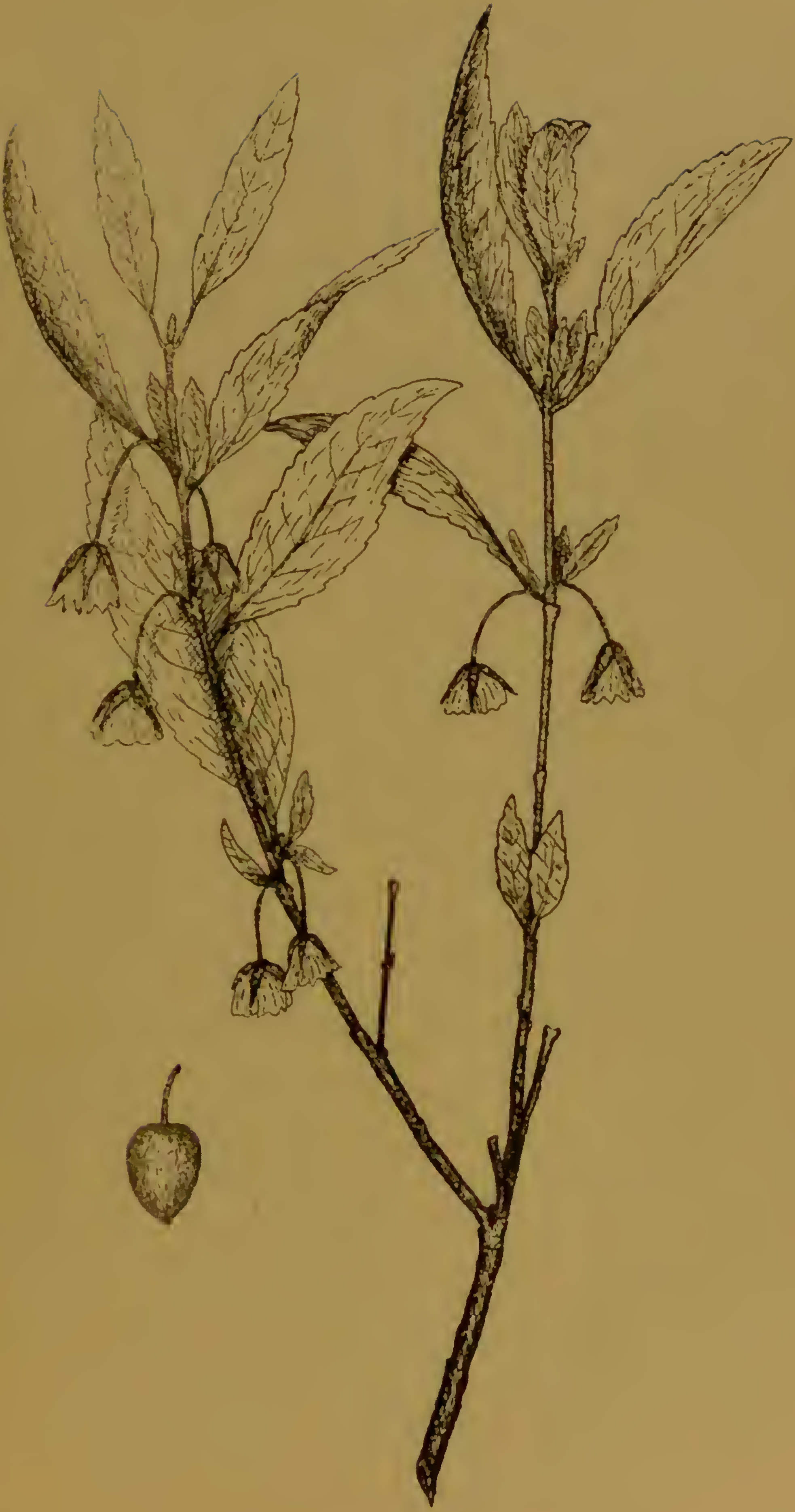
Pistils of few, usually 5, carpels, united only on their inner margins. Ovarian cavities distinct. Style simple. Stamens generally of the same number as the carpels, free. Sepals same number, free or nearly so. Petals the same, free. Disk usually well developed, on which the petals and stamens are inserted.

The order is small, but widely distributed in warm countries. No representatives have yet been found on the mainland of Tasmania, but two species have been gathered on islands of Bass Straits.

ZYGOPHYLLUM.

Sepals and petals 4 or 5. Stamens twice as many. Capsule 4 or 5 angled, narrow at the base, flat above, each carpel being wedge-shaped. Leaves divided into one pair of equal leaflets.

Leaflets broadly ovate... ... ... 1. *Z. apiculatum.*
Leaflets linear ... ... 2. *Z. billardieri.*



ARISTOTELIA PEDUNCULARIS. *H.*

[illegible]

1. Z. APICULATUM, *F. v. M.* Spreading undershrub. Leaflets broadly oblong, 1-1½ inch long. *Rœpera latifolia*, Hook.

Islands of Bass Straits. Extra-tropical Australia. Fl. Oct.-Dec.

2. Z. BILLARDIERI, *D.C.* Spreading undershrub. Leaflets linear, rarely somewhat broader, ½-¾ inch long. Flowers yellow. *Rœpera billardieri*, Hook.

ORDER XX. *GERANIACEÆ.*

Pistil of 3 to 5 blended carpels. Ovarian cavities distinct, attached to a central prolongation of the torus. Stamens usually 10. Filaments free or slightly united at the base, inserted into a glandular enlargement. Sepals and petals usually 5, free. Corolla rarely irregular.

Fruit with a pointed beak.
  Flowers regular, leaves much divided ... ... 1. *Geranium.*
  Flowers irregular, leaves entire ... ... 2. *Pelargonium.*
Fruit oblong-capsule, leaves trifoliate ... ... 3. *Oxalis.*

1. GERANIUM.

Sepals and petals 5, regular. Stamens 10. Pistil with a long beak, each carpel 1-seeded, coiling up towards the apex when ripe.

Flowers on long stalks ... ... 1. *G. dissectum.*
Flowers nearly sessile ... . 2. *G sessiliflorum.*

1. G. DISSECTUM, *L.* A spreading, loosely-branched perennial, 6-12 inches long. Leaves long, stalked, orbicular, but divided nearly to the stalk into 3 or 5 segments, that are again more or less divided into usually 3 lobes, ½-1 inch in diameter. Flowers mostly solitary, axillary, on long stalks. Sepals 2-3 lines long. Petals rather longer, pink or white.

This form common in Australia differs from the type in being of more procumbent habit, seeds smoother, and leaves less divided. *G. dissectum*, var. *australe*, B.; *G. pilosum*, Sol.; *G. potentilloides*, L'Her.

Very common. Throughout extra-tropical Australia. All or most temperate climates. Fl. spring and summer.

2. G. SESSILIFLORUM, *Car.* Similar in all parts to the above, only a generally dwarfed habit. Flower-stalks very short. Sepals very acute. *G. brevicaule*, H. Probably only a variety of *G. dissectum*, L.

Found in most alpine situations; also in Victoria, New South Wales, and New Zealand. Fl. spring and summer.

ERODIUM CICUTARIUM, *L'Her.* Leaves oblong, pinnate, and dissected into very numerous lobes. Flowers small, pink, few or many, on common stalks. Fruit with a very long beak. Introduced and widely distributed in pastures. Throughout Northern temperate parts.

2. PELARGONIUM.

Sepals and petals 5, somewhat irregular. Stamens 10, slightly united at the base, many without anthers. Fruit very similar to *Geranium.*

P. AUSTRALE, *Willd.* An erect or decumbent perennial, from a few inches to 2 feet. Leaves broadly reniform, on long stalks. Flowers many or few, in a a stalked umbel. Petals pink. *P. acugnaticum*, Thun (included).

Very common at all altitudes. Extra-tropical Australia, New Zealand, and South Africa. Fl. spring and summer.

3. OXALIS.

Sepals and petals 5, regular. Stamens 10. Pistil without a protruding beak. Carpels usually including many seeds, not leaving the torus when seeds are discharged. Leaves trifoliate.

Flowers white ... ... 1. *O. magellanica.*
Flowers yellow ... ... 2. *O. corniculata.*

1. O. MAGELLANICA, *Forst.* A small creeping perennial. Leaflets broadly obcordate, about 3 lines long. Flowers solitary, on long stalks. Sepals $1\frac{1}{2}$-2 lines long. Petals 6 lines long, broadly obovate, white.

In damp places in many parts at a high altitude; also in Victoria, New Zealand, and South America. Fl. Oct.-Feb.

2. O. CORNICULATA, *L.* Very similar to the last, but less creeping. Leaflets usually more deeply divided at the apex. Flowers often 2 or more on the stalk. Sepals 2-3 lines long. Petals about 4 lines long, oblong, pale yellow.

In all pastures and waste places. Common to all temperate localities from an early date. Probably originating from North America. Fl. all the year.

ORDER XXI.—*RUTACEÆ.*

Pistil of few, mostly 4 or 5, carpels, that are variously blended, sometimes nearly free. Ovarian cavities distinct. Styles often blended. Stamens usually twice as many as the members of a perianth whorl, inserted on the outer part of the thickened glandular disk. Sepals and petals 4 or 5.

A very large order, of world-wide distribution and varied forms.

Leaves mostly opposite.
  Stamens 8. Petals 4.
    Calyx-lobes obsolete. Corolla usually tubular ... 1. *Correa.*
    Calyx-lobes well developed. Corolla spreading ... 3. *Boronia.*
  Stamens 4 or 10. Leaves trifoliate, rarely simple.
    Petals 4. Stamens 4 ... ... 2. *Zieria.*
    Petals 5. Stamens 10 ... ... 4. *Acradenia.*
Leaves alternate, simple ... ... 5. *Eriostemon.*

1. CORREA.

Petals 4, usually connate in a tubular corolla. Sepals forming a cup-like calyx. Stamens 8, free. Pistil of 4, nearly free carpels. Style entire, filiform.

Petals nearly or quite free .. .. 1. *C. alba.*
Petals connate for a considerable length.
  Four filaments dilated at base ... ... 2. *C. speciosa.*
  Filaments all similar ... ... 3. *C. lawrenciana.*

1. C. ALBA, *Andr.* An erect, much-branched shrub of from 2-6 feet, and the foliage of a peculiarly soft description. Leaves $\frac{1}{2}$-1 inch, nearly as broad as long, blunt, nearly smooth above, densely covered with close woolly hair beneath. Flowers terminal, solitary, or 2 or 3 together, usually white. Calyx cup-shaped, with four small teeth. Petals about $\frac{1}{2}$ inch long, spreading, forming a bell-shaped corolla. Stamens with filiform, undilated filaments. *C. rufa*, Hook.

Principally a coast plant. Found also in Victoria and South Australia. Fl. all the year.

2. C. SPECIOSA, *Ait.* A very variable shrub, often attaining 8 feet. Leaves shortly stalked, from ovate to lanceolate, usually marked by convex dilations on the upper surface, from $\frac{3}{4}$-2 inches long, smooth above and closely hairy

beneath. Flowers terminal, pendulous on short stalks, varying in colour from red, through white to yellowish-green, solitary or two or three together. Calyx cup-shaped, with 4 minute teeth. Petals from ¾-1 inch long, united into a tubular corolla with 4 spreading lobes. The filaments of the four stamens that are opposite the petals are dilated towards the base; the other four not so.

Very common. Distributed also throughout extra-tropical Australia. Fl. spring and summer.

Amongst the many varieties of this plant that have been raised by some botanists to specific rank, the following is found in Tasmania on the North Coast:—

> Var. *backhousiana*. Leaves ovate or oblong, flat, not raised in convex dilations Flowers nearly cylindrical, above 1 inch long. *C. backhousiana*, Hook.

3. LAWRENCIANA, *Hook.* A shrub of somewhat similar growth to *C. speciosa.* Leaves stalked, from ovate to oblong, blunt, flat, smooth above, closely woolly beneath, from ½-2 inches long. Flowers 1 to 3 together, terminal or axillary, pendulous on short stalks. Calyx cup-shaped, with 4 small teeth. Petals ¾-1 inch long, united into a cylindrical corolla with 4 lobes that are shorter and blunter than those of *C. speciosa.* Filaments of the stamens all of a uniform shape.

Very common in hilly districts. Found also in Victoria Fl. spring and summer.

The following is also found in Tasmania:—

> Var. *glabra*. Leaves narrow, oblong to almost linear, smooth on both sides.

2. ZIERIA.

Calyx deeply 4-lobed. Petals 4, spreading. Stamens 4. Pistil composed of 4 distinct, or nearly distinct, carpels. Styles nearly terminal, short, and united at least at the top. Stigma capitate, 4-furrowed or shortly 4-lobed. Essentially an Australian genus Closely allied to *Boronia.*

Leaves, simple . ... 1 *Z. veronicea.*
Leaves of 3 leaflets.
  Leaflets about ¼ inch, margins revolute . ... 2. *Z. cytisoides.*
  Leaflets 1 to 2 inches, margins flat, or nearly so 3. *Z. smithii.*

1. Z. VERONICEA, *F. v. M.* A low shrub, clothed with velvety hairs. Leaves all simple, opposite or alternate, sessile or nearly so, ovate or oblong, blunt, from ¼-½ inch long, the margins revolute. Flowers shortly stalked, solitary, or 2 or 3 together. Petals about twice as long as the calyx. Filaments hairy. Ovary, style, and fruit delicately hairy.

Near George's Bay; also in Victoria and South Australia. Fl. Nov.-Dec.

2 Z. CYTISOIDES, *D. C.* A much-branched shrub, covered with delicate velvety hairs. Leaves opposite, composed of 3 leaflets on a short stalk; leaflets obovate-oblong, blunt or pointed, the margins revolute, about ¼ inch long. Flowers few, on a common stalk. Calyx short, with broad acute segments. Petals not quite twice as long.

Swanport and Bicheno; also in New South Wales. Fl. Nov.

3. Z. SMITHII, *Andr.* A tall shrub or small tree. Leaves opposite, formed of 3 leaflets on a common stalk; leaflets lanceolate to oblong, usually pointed, from 1 to 3 inches long, flat, or occasionally with the margins slightly recurved. Flowers about ¼ inch across, white, many together in a branched cyme Calyx-lobes broad and short. Petals 3 times as long, and delicately hairy on the outer side. *Z. lanceolata*, Hook.

Common in many parts. Found also in Queensland, New South Wales, and Victoria Fl. Sept -Nov.

3. BORONIA.

Calyx deeply 4-lobed. Petals 4, spreading. Stamens 8. Anthers either all similar and perfect, or 4 imperfect. Pistil composed of 4 distinct, or nearly distinct, carpels. Ovules 2 in each carpel, but usually only one attaining maturity. Style terminal, united. Stigma entire or 4-lobed. Leaves opposite. Essentially an Australian genus.

Leaves with many linear lobes.
Lowest pair of leaflets close to stem. Filaments ciliate ... ... 2. *B. pilosa.*
Lowest pair of leaflets distant from stem. Filaments woolly ... ... 1. *B. pinnata.*
Leaves simple, or divided once or twice in threes.
Flowers axillary Filaments hairy.
Leaves seldom divided, if so with 3 small acute leaflets ... ... 3. *B. polygalifolia.*
Leaves of 3-toothed leaflets, often a second time divided ... ... 4. *B. anemonifolia.*
Flowers terminal. Filaments not, or slightly hairy.
Leaves as broad as long. Petals large ... ... 5. *B. rhomboidea.*
Leaves longer than broad. Petals hardly exceeding sepals... ... . 6. *B. parviflora.*

1. B. PINNATA, *Sm.* A small diffuse or erect shrub of few feet in height. Leaves usually with 5 to 9 linear leaflets arranged in pairs, the pairs rather distant from one another, and the lowest pair some distance from the stem. Flowers pink or white, rather large, numerous in the terminal axils. Sepals small, acute. Petals $\frac{1}{4}$-$\frac{1}{2}$ inch long, pointed Filaments woolly, hairy, especially towards the thickened summit.

Common in parts. Found also in New South Wales and Victoria. A very variable plant. Fl. Nov.-Jan.

Var. *gunnii.* Leaflets more crowded. Flowers smaller. Filaments less hairy. Anthers all similar Stigma very small. *B. gunnii.* Hook.

Var. *citriodora.* An alpine plant of small growth, and the leaflets often reduced to 3. The plant has a strong scent of lemons. *B. citriodora*, Hook.

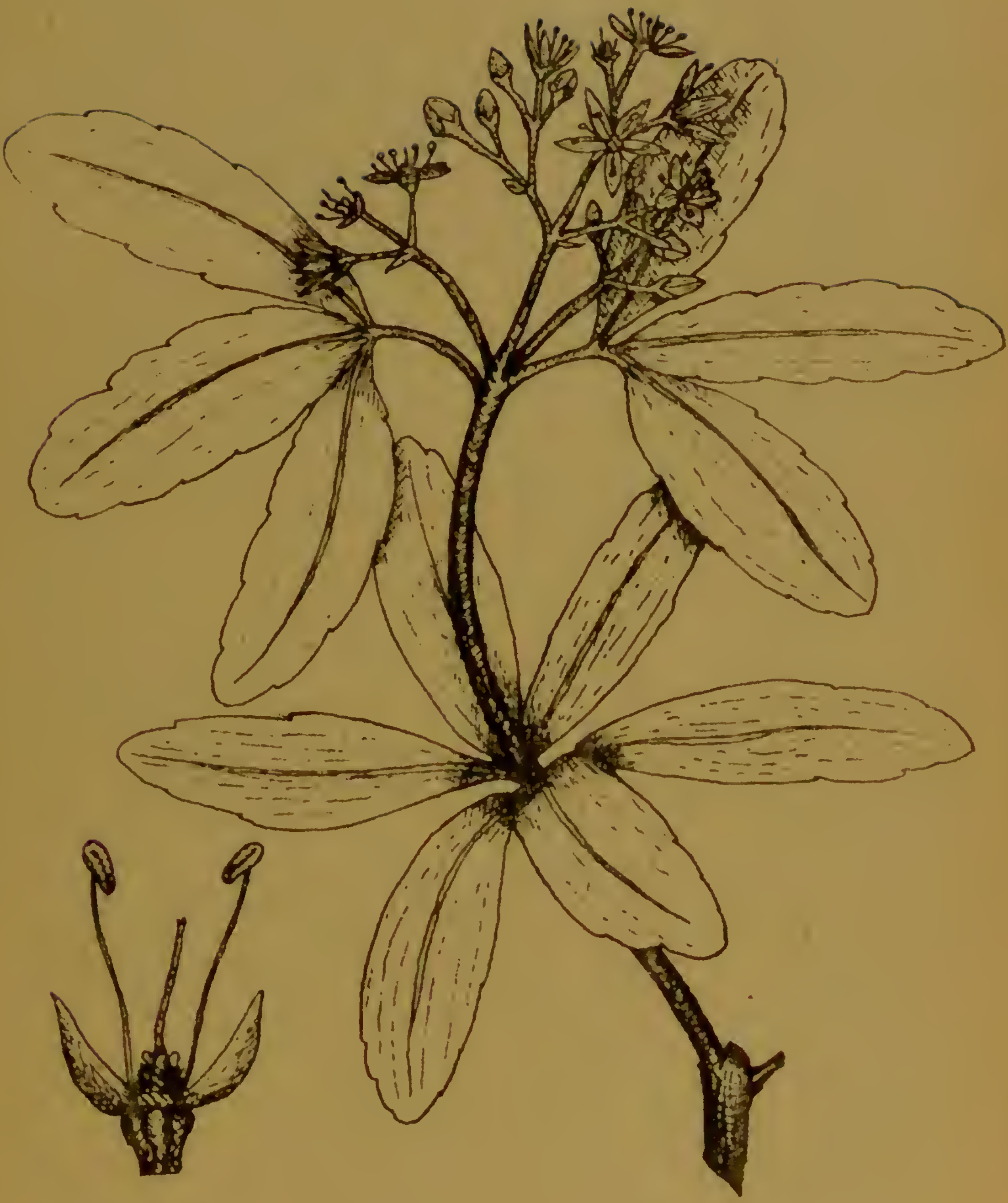
2. B. PILOSA, *Lab.* Very similar to *B. pinnata.* and possibly a variety only. The branches are much more extensively clothed with fine hairs. Leaves similar to *B. pinnata*, but the pairs of leaflets more crowded, and the lowest pair close to the stem. Flowers smaller and fewer in the terminal axils. Filaments ciliate rather than woolly.

Very common; also found in Victoria. Fl. Sept.-Nov.

3. B. POLYGALIFOLIA, *Sm.* A spreading decumbent plant, of small dimensions, growing from a thickened stock, but in some instances a small shrub attaining 1 or even 2 feet height. Leaves variable in length, but seldom exceeding $\frac{1}{2}$ inch, simple, lanceolate and acute, but sometimes deeply 3-lobed, or even composed of 3 small leaflets. Flowers axillary stalked and solitary. Sepals small. Petals 2 or three times as long, pink or white. Filaments hairy and glandular towards the top. *B. hyssopifolia*, Hook.

Very common; spreading also from Queensland along Eastern Australia to South Australia. Fl. Oct.-Dec.

4. B. ANEMONIFOLIA, *A. Cunn.* A shrub of 2 or 5 feet. Leaves composed either of three 3-toothed leaflets, or one or all of the leaflets again divided, and all more or less linear. Flowers axillary, usually 3 or 5, or even more, together on a common stalk, rarely solitary. Flower and fruit similar to *B. polygalifolia.*



ACRADENIA FRANKLINIÆ *Kipp.*

JNO. VAIL, GOVERNMENT PRINTER, TASMANIA

Principally found on the coast in the north of the Island. The Australian distribution similar to the preceding species. Fl. spring and summer.

Amongst the varieties of this species the two following are found in Tasmania :—

Var. *dentigera*. Leaflets usually 3, linear-cuneate, thick, 3-toothed at the top. Flowers 1 to 3 together.

Var. *variabilis*. Leaves irregularly compound, more or less twice divided. Leaflets oblong or linear-cuneate, blunt. Flowers rather small, 3 or more together. ***B. variabilis***, Hook.

5. B. RHOMBOIDEA, *Hook*. A much-branched, rigid shrub, of about 3 feet. Leaves simple, sessile, rhomboid to reniform, about ½ inch broad. Flowers pink or white, terminal, sessile, solitary or few together. Sepals ovate, pointed, about 2 lines long. Petals broad, about ¼-inch long. Filaments tuberculate, thickened at the upper end. Ovary smooth. Style rather long.

Longley, the Western Mountains, Cradle Mt. Fl. spring and summer.

6. B. PARVIFLORA, *Sm*. A small decumbent shrub, seldom exceeding a few inches, the numerous branches arising from a thickened stock. Leaves all simple, oblong to linear pointed, and mostly ⅓ inch. Flowers small, terminal or nearly so, solitary or few together. Sepals pointed, 1½ to 2 lines long. Petals white, scarcely exceeding them. Filaments smooth or slightly hairy, and glandular towards the top. Ovary smooth. *B. pilonema*, Hook.

Common in heath and sandy places; also found in New South Wales and Victoria. Fl. spring and summer.

4. ACRADENIA.

Calyx 5 cleft, or rarely the divisions are 6 or 7. Petals similar in number. Stamens twice the number of the petals. Anthers all similar and perfect. Carpels usually 5, united almost to the top. Styles terminal, uniting, filiform. Stigma small. Ovules 2 in each carpel. The genus is closely allied to *Boronia* and *Zieria*, and is confined to a single species endemic in Tasmania.

A. FRANKLINIÆ, *Kipp*. An erect shrub of 8 to 12 feet. Leaves opposite, formed of 3 leaflets on a common stalk. Leaflets 1 to 2 inches long, lanceolate, crenated on the margin. Flowers white, in terminal, loosely-trichotomous cymes. Sepals distinct, short. Petals ¼ inch long, pubescent inside. Filaments nearly as long as the petals, thin and smooth. Ovary hairy. Fruit divisions hard, blunt, transversely wrinkled.

On the banks of the Franklin, Gordon, and Pieman. Fl. Nov.-Dec.

5. ERIOSTEMON.

Calyx with 5, rarely 4, divisions. Petals 5, rarely 4. Stamens shorter than the petals, and twice their number. Filaments hairy, thickened below, and thin above. Carpels usually free from the base, and similar in number to the petals. Styles arising from below the middle, and immediately united into one. Stigma small. Ovules 2 in each cell, but only one ripening. Leaves alternate, simple.

Leaves not very narrow.	
Leaves narrowed at apex.	
Leaves silvery white beneath	7. *E. squameus.*
Leaves with minute point .	1. *E. virgatus.*
Leaves blunt . .	5. *E. oldfieldii.*
Leaves obovate or truncate.	
Leaves obovate, fleshy	2. *E. obovalis.*
Leaves flat, truncate ...	4. *E. hillebrandi.*

Leaves linear.
  Leaves cylindrical ... ... 3. *E. montanus.*
  Leaves shortly bifid ... ... 6. *E. daviesii.*

1. E. VIRGATUS, *Hook.* An erect, twiggy shrub of a few feet growth. Leaves numerous, oblong to lanceolate, narrow at the base, broad at the end, with a short point, the margin often slightly recurved, almost shining above and the glands small, pale beneath. Flowers in 4 parts, solitary, stalked, in the axils of the leaves. Sepals round, blunt, ½ line long. Petals white or pink, oblong, blunt, about ¼ inch long. Filaments ciliate, flattened and narrowed towards the anther.

Rocky Cape, George's Bay, Swanport, Three Hut Point, Macquarie Harbour, &c. The species is endemic. Fl. Dec.

2. E. OBOVALIS, *Cunn.* A decumbent or sub-erect shrub of few feet growth. Leaves obcordate to oblong, usually about ¼ inch long, fleshy, usually concave above, and marked with coarse prominent glands. Flowers in 5 parts, solitary in the axils of the leaves, stalked. Sepals very short and round Petals often ½ inch long, pink or white, oblong. Filaments ciliate, flattened, narrowed above.

Common in dry parts, especially on hills. Found also in New South Wales and Victoria. Fl. spring and summer.

3. E. MONTANUS, *F. v. M.* A small decumbent or ascending shrub. Leaves nearly cylindric, blunt, crowded on ends of branches, ¼-½ inch. Flowers few in the terminal axils, pink-white. Petals 2-3 lines long, filaments longer, filiform glabrous. *Phlebalium montanum.*

Ben Lomond, Ironstone, and other western mountains. Fl. Nov.-Jan.

4. E. HILLEBRANDI, *F. v. M.* An erect, branched shrub. Leaves flat, narrow, oblong, ½-1½ inch, margins minutely serrate, end mostly truncate. Flowers mostly in small terminal umbels, white. Petals 2½ lines long. Filaments same length, filiform. *Phlebalium bilobum*, Lind.

Islands of Bass Straits, Schouten Island, Apsley River, Mt. Gog; also in Victoria and South Australia. Fl. Nov.-Dec.

5. E. OLDFIELDII, *F. v. M.* Very similar to *E. virgatus*, but more branched in habit, and the leaves without the terminating point. Flowers few in the terminal axils, pink-white, 5-7 parts. Petals 2½ lines. Filaments filiform glabrous. *Phlebalium oldfieldii*, F. v. M.

On ranges adjoining Adamson's Peak and La Perouse. Fl. Dec.-Jan.

6. E. DAVIESII, *H.* Close to and probably a variety only of *E. lepidotus*, Spreng. Leaves narrow linear with recurved margins, end rather broader and shortly bifid, 1-2 inches long. Flowers in small terminal umbels, yellowish. Petals 2 lines. Filaments longer, filiform glabrous. *Phlebalium glandulosum*, H.; *E. sediflorus*, F. v. M.

Near George's Bay. Fl. Sept.-Dec.

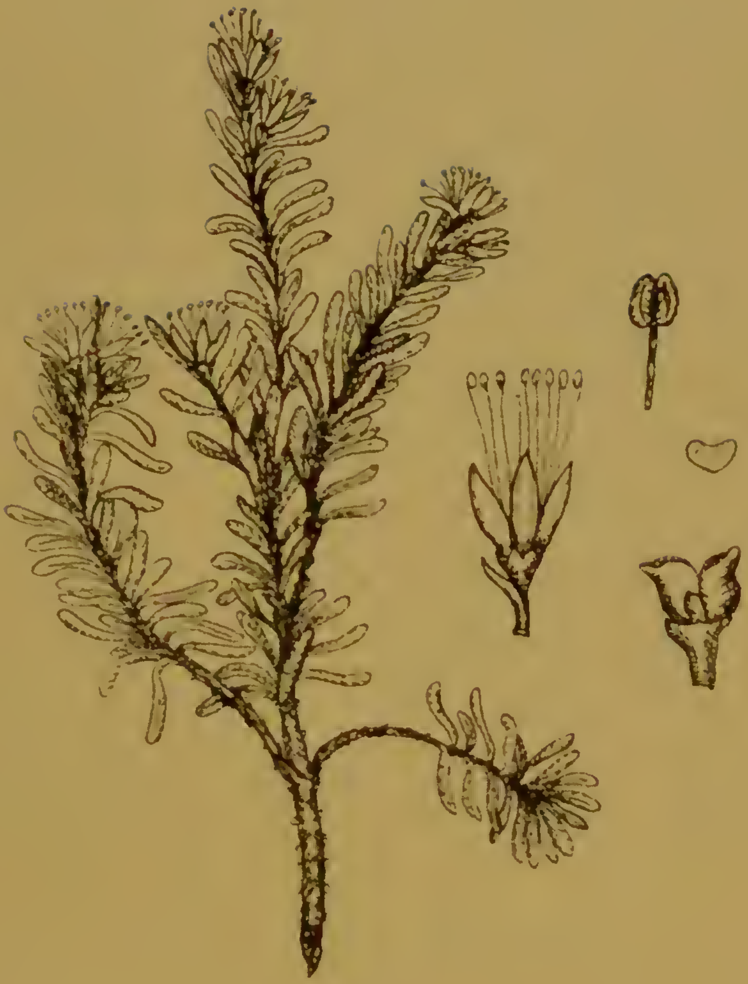
7. E. SQUAMEUS, *Lab.* An erect shrub, often 10-15 feet. Leaves lanceolate, mostly 1-3 inches long, shortly stalked, narrowed at both ends, sometimes the ends very blunt, white beneath. Flowers generally numerous in small axillary panicles, white. Petals 2-3 lines long. Filaments somewhat flattened at the base. *Phlebalium billardieri*, A. Juss.

Abundant: also in Victoria and New South Wales. Fl. Nov.

ORDER XXII.—*STACKHOUSIACEÆ.*

Pistil of 2-5 nearly free carpels, each containing one ovule. Disk thin, adherent to the calyx-tube. Petals and stamens inserted on the margin of the disk.

A small order with but one genus: confined to Australia, Philippine Islands, and New Zealand.



ERIOSTEMON MONTANUS. *F.* *M*

STACKHOUSIA.

Sepals 5, united at the base. Petals 5, more or less cohering on their margins, often forming tubular corollas. Stamens 5.

Flowers few in upper axils ... . 1. *S. pulvinaris.*
Flowers in an elongating spike. Leaves obtuse ... 2. *S. spathulata.*
Leaves mostly acute.
  Flowers white, spike long ... ... 3. *S. linarifolia.*
  Flowers yellow, spike dense ... ... 4. *S. flava.*

1. S. PULVINARIS, *F. v. M.* Small, dense, prostrate herb. Leaves narrow, oblong, obtuse, crowded, ¼ inch. Flowers few in upper axils. Corolla ¼ inch long, white.

Western mountains: also Victoria and New South Wales. Doubtfully distinct from *S. minima* of New Zealand. Fl. Nov.-Dec.

2. S. SPATHULATA, *Sieb.* A herb much branched at the base, the branches decumbent or ascending, rather stout, and from 6 inches to 1 foot or more. Leaves ovate to oblong, blunt, thick, mostly from ½ to 1 inch long. Corolla-tube ¼ inch long, lobes much shorter, oblong, blunt. Divisions of the fruit fully 2 lines long, with 3 prominent vertical acute angles or narrow wings. *S. maculata*, Hook.

Recherche Bay, Trial Harbour (West Coast), Bass Straits; also Eastern and Southern Australia. Fl. Nov.-Dec.

3. S. LINARIFOLIA, *A. Cunn.* A herb with a perennial base and numerous simple or sightly branched erect stems of about 1 to 1½ feet. Leaves linear or lanceolate, mostly on the lower portions of the stem, from ½ to 2 inches long. Inflorescence at first dense, but considerably elongating as the fruit attains maturity. Calyx-lobes narrow. Corolla-tube ¼ inch long, lobes much shorter, oblong, obtuse. Fruit divisions obovoid, prominently reticulated, but not angled. *S. gunnii*, Hook., is a form of this very variable species, *S. monogyna*, Lab.

Very abundant throughout the Island; also in Eastern and Southern Australia, from Queensland to South Australia. Fl. Sept.-Dec.

4. S. FLAVA, *Hook.* A herb much branching at the base, branches decumbent or ascending, from 6 inches to 1 foot. Leaves linear, flat, rather thick, but in parts broader and thinner, seldom exceeding ½ inch. Flowers yellow, much smaller than in the last two species, the dense inflorescence not lengthening out. Calyx small, with ovate lobes. Corolla-tube about 2 lines long, the lobes oblong and pointed.

Woolnorth, in poor sandy soil, *Gunn.* Found also in West Australia, South Australia, and Victoria. Fl. Nov.-Dec.

ORDER XXIII.—*RHAMNACEÆ.*

Pistil of 2 to 4 blended carpels. Ovarian cavities distinct, usually more or less blended with the calyx-tube. Disk well developed, and half enclosing the pistil when that is free. Calyx-lobes 4 or 5. Petals minute or none, inserted at the top of the calyx-tube, same number as sepals. Stamens similar in number, opposite to and inserted with the petals.

A large order, of world-wide distribution.

Calyx-tube adnate or nearly so.
  Inflorescence loose ... ... 1. *Pomaderris.*
  Inflorescence dense ... . 2. *Spyridium.*
Calyx-tube exceeding the ovary.
  Inflorescence dense ... . 3. *Stenanthemum.*
  Inflorescence loose ... ... 4. *Cryptandra.*
  Coarsely spiney ... . 5. *Discaria.*
  Flowers solitary ... ... 2. *Spyridium*

1. POMADERRIS.

Calyx-tube adnate to the pistil, lobes 5. Petals often absent. Stamens with rather long filaments, not enclosed in the petals. Ovary half superior. Fruit capsular, and protruding from the persistent calyx.

Confined to Australia and New Zealand.

Leaves exceeding 2 inches, broad, flat.
  Leaves smooth above. Flowers light yellow. Petals present ... . 1. *P. elliptica.*
  Leaves wrinkled above. Flowers greenish. Petals absent... ... ... 2. *P. apetela.*

Leaves seldom exceeding $\frac{1}{2}$ inch. Petals absent.
  Leaves $\frac{1}{2}$ to 1 inch, flat. Calyx 1 to $1\frac{1}{2}$ line long ... 3. *P. racemosa.*
  Leaves about $\frac{1}{4}$ inch, flat. Calyx about $\frac{3}{4}$ line long... 4. *P. elacophylla.*
  Leaves about $\frac{1}{2}$ inch, linear, margins revolute ... 5. *P. phylicifolia.*

1. P. ELLIPTICA, ***Lab.*** A tall shrub or small tree, the young branches and the veins of the leaves covered with rusty stellate hairs, intermixed with simple white ones. Leaves 2 to 3 inches long, 1 to $1\frac{1}{2}$ inches broad, ovate, smooth above, and densely covered below with white hairs, the margins wavy. Flowers light yellow, in terminal corymbose panicles. Calyx about $1\frac{1}{2}$ inch long, white externally, with minute stellate hairs, smooth within, the lobes ovate-lanceolate, about twice as long as the tube. Petals nearly orbicular, concave, on slender claws in typical specimens, but variable and sometimes abortive.

Common in many parts: also in New South Wales and Victoria. Fl. Oct.-Nov.

> Var. *ferruginea.* Leaves rather longer in proportion to their breadth, and the down on the under side much more velvety, and usually ferruginous. *P. ferruginea*, Hook.; *P. lanigera*, Sims.

2. P. APETELA, ***Lab.*** A shrub or small tree, attaining in favourable situations 20 feet or more, the young branches and the under side of the leaves covered with closely matted stellate hairs. Leaves shortly stalked, broadly oblong, 2-4 inches long, rough and wrinkled on the upper side, the rib and veins prominent beneath, the margins irregularly crenulate Flowers small and very numerous, in loose, thyrsoid panicles. Calyx $1\frac{1}{4}$ line long, with stellate hairs on the outside, the lobes much longer than the tube. Petals none.

Very common: also in New South Wales, Victoria, and South Australia. Fl. Oct.-Nov.

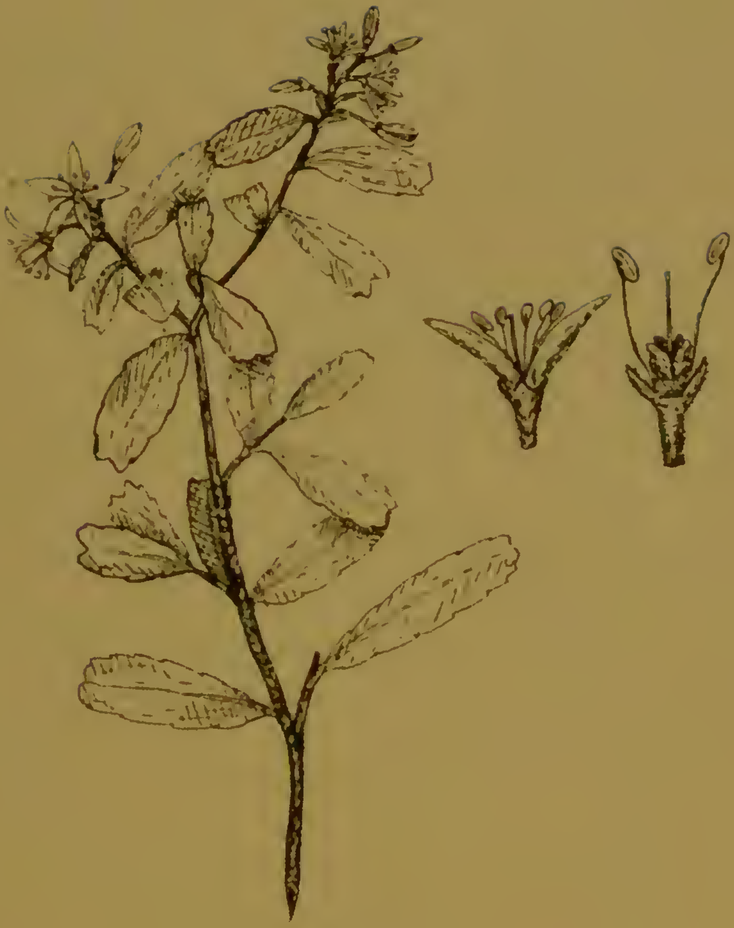
3. P. RACEMOSA, ***Hook.*** A small, much-branched shrub, the stems and under sides of the leaves covered with stellate hairs. Leaves small, ovate, but variable, about $\frac{3}{4}$ inch long. Flowers seldom numerous, in a panicle, or reduced almost to a simple cyme. Calyx 1-$1\frac{1}{2}$ line long, with stellate hairs on the outer surface. Petals none. Styles cleft to the middle, with club-shaped stigmas.

The species is very variable. North Coast, about the mouth of the Tamar, Fingal; also in New South Wales, Victoria, and South Australia. Fl. Nov.-Dec.

> A specimen gathered at Fingal by Aug. Simson was identified in error by von Mueller as *P. subrepanda*, F. v. M.

4. P. ELACHOPHYLLA, ***F. v. M.*** A small shrub of erect habit, but much branched, covered with brown, stellate hairs that are not as densely matted as in most species. Leaves broadly obovate, rarely $\frac{1}{4}$ inch long, smooth above, and covered with stellate hairs beneath. Flowers in loose thyrsoid panicles. Calyx about $\frac{3}{4}$ line long, covered on the outside with stellate hairs, the tube very short. Petals none Styles short, club-shaped. Young capsule hairy, the free part much longer than the part enclosed in the permanent calyx-tube.

Near Longley. Found also in Victoria. Fl. early summer.



ERIOSTEMON HILDEBRANDI. *F. v. M.*

[illegible] Printer Tasmania

5. P. PHYLICIFOLIA. *Lodd.* A heath-like shrub, with numerous erect branches, densely hairy, the hairs sometimes being stellate. Leaves linear, or nearly so, rarely broader, and nearly flat, almost sessile, seldom exceeding ½ inch, the margins usually much revolute, the upper surface usually more or less roughened with simple or stellate hairs, the under surface white with dense white hairs. Flowers small and few, in little loose cymes in the upper axils, scarcely longer than the leaves, but very abundant along the smaller branches, the upper ones forming panicles. Calyx scarcely 1 line long, densely hairy. Petals none. ***P. ericæfolia***, Hook.

Mersey River, St. Paul's River; also in Victoria and New Zealand. Fl. Nov.

2. SPYRIDIUM.

Calyx-tube adnate to the ovary, only extending beyond in *S. ulicinum*, lobes 5. Petals 5, hood-shaped, and enclosing the stamens. Ovary wholly inferior, 3-celled. Fruit a capsule, crowned by the persistent calyx-lobes.

The genus is extra-tropical Australian.

Leaves proportionately broad.
  Leaves under ¼ inch, smooth above.
    Slender. Leaves white beneath ... 1. *S. serpillaceum.*
    Wiry. Leaf margins recurved ... 4. *S. lawrencii.*
  Leaves usually exceeding ¼ inch.
    Leaves hairy above, veins much impressed ... 2. *S. parvifolium.*
    Seldom hairy above, veins but slightly impressed 3. *S. obovatum.*
Leaves narrow, margins recurved.
  Flowers in dense terminal heads.
    Floral leaves broad, white ... 5. *S. vexilliferum.*
    Floral leaves normal ... 6. *S. eriocephalum.*
  Flowers mostly solitary ... 7. *S. ulicinum.*

1. S. SERPILLACEUM. *F. v. M.* A small, slender, twiggy, ascending undershrub, seldom more than a few inches high. Leaves obovate, white beneath, mostly about ¼ inch long. Flowers in small very compact heads, with persistent brown scarious bracts intermixed. Calyx about 1 line long, densely hairy on the outer surface. Disk slightly raised above the ovary, lining the short tube and forming a ring under the lobes. *Cryptandra obcordata*, Hook.

Tamar River, Swansea, Spring Bay; also found in Victoria. Fl. Nov.-Dec.

2. S. PARVIFOLIUM, *F. v. M.* Erect, with numerous slender branches, covered with soft hairs. Leaves obovate or orbicular, very blunt or abruptly terminating, from ¼-⅓ inch long, the margins usually recurved, the veins much impressed on the upper and prominent on the lower surface. Flowers closely sessile, in little heads, intermixed with short brown bracts. Calyx about 1 line long, very hairy. Disk very prominent over the ovary, and almost concealing it. Capsule completely sunk. *Cryptandra parvifolia*, Hook.; *C. hookeri*, F. v. M.

Tamar River and Bass Straits; also in New South Wales, Victoria, and South Australia. Fl. Dec.

> Var. *molle*. Softly hairy all over. *Cryptandra mollis*, Hook. Bass Straits.

3. S. OBOVATUM, *B.* An erect, much-branched shrub, of variable habit, usually 3-8 feet high. Leaves obovate or nearly obcordate, about ½ inch long, margin slightly recurved, under surface densely tomentose, upper surface smooth. Flowers usually few, in small compact terminal heads. Disk prominent, undulate. *Cryptandra obovata*, H

East Coast, Port Esperance, Brown Mt., near Campania, &c. Fl. Oct.

Var. *velutinum.* Generally more robust in all details. Leaves about ¾ inch long, softly hairy on the upper surface. Flowers in compact heads, about ½ inch diameter. Mt. Abrupt, near Hobart.

Var. *gunnii.* Still more robust. Leaves about 1 inch long. Flower-heads ½-1 inch in diameter. Disk less prominent *Cryptandra gunnii*, H.

4. S. LAWRENCII, *B.* Small, depressed shrub, with numerous rigid, wiry branches. Leaves about 2 lines long, thick, obvate, with recurved margins. Flowers in numerous small dense terminal heads. Calyx hardly 1 line long. *Cryptandra lawrencii*, H.

St. Paul's River. Great Swanport. Fl. Nov.-Dec.

5. S. VEXILLIFERUM, *Reisseh.* A small heath-like shrub, the young shoots often glutinous. Leaves linear to lanceolate, blunt, about ½ inch long, the margins revolute, and, excepting the floral ones, smooth above and densely hairy beneath. Flower-heads very compact, the flowers matted together by the dense development of stellate hairs, about ¼ inch in diameter, and containing 1 or 2 ovate, stalked floral leaves that are very white with stellate hairs on both sides, and numerous brown bracts. Calyx hairy, scarcely 1 line long. Fruiting-calyx 2 lines long. *Cryptandra vexillifera*, Hook.

In the north and west. Throughout Southern Australia. Fl. Dec.

6. S. ERIOCEPHALUM, *Fenzl.* An erect, heath-like shrub. Leaves linear, rigid, pointed, often pungent, from ¼-½ inch long, the margins closely revolute, and concealing the under surface, the upper surface smooth. Flower-heads dense, about ¼ inch across ; the flowers matted together, and containing brown bracts, and 1 or 2 floral leaves similar to, but broader than, the stem leaves. Calyx scarcely 1 line long, hairy. *Cryptandra eriocephala*, Hook.

Woolnorth, South Esk River, Schouten Island, Risdon, Bass Straits ; New South Wales, Victoria, and South Australia. Fl. Oct.-Dec.

7. S. ULICINUM, **Benth.** A tall, much-branched shrub, of 6 or more feet. Leaves linear, acute, blunt, or shortly bifid, about ½ inch long, the margins revolute, smooth above, hairy beneath. Flowers few together, closely sessile amongst the last leaves of short lateral branches. Calyx about 2½ lines long, silky hairy, the free part of the tube short. *Cryptandra ulicina*, Hook.

Derwent River above New Norfolk, Hamilton, Mount Wellington, near Watchorn's Hill, Mount Dromedary, &c. Fl. Sept.-Dec.

3. STENANTHEMUM.

Calyx-tube adherent at the base, free, slender, and often deciduous above the ovary and disk, 5-lobed at the top. Petals 5, hood-shaped, enclosing the anthers, and inserted with the stamens at the top of the calyx-tube. Disk scarcely prominent, round the top of the ovary at the base of the calyx-tube. Ovary entirely buried, 3-celled. Style entire, or minutely 3-toothed.

The genus contains few species, and is confined to Australian distribution. Tasmania possesses but one species, which is endemic.

S. PIMELEOIDES, *Benth.* A small prostrate, much-branched shrub. Leaves obovate to obcordate, about ¼ inch long, the margins slighly recurved, mostly smooth on the upper surface, white, with close hairs beneath. Flower-heads very dense, ¼-½ inch in diameter, with numerous brown bracts, and often 2 or 3 floral leaves intermixed. Calyx 2 lines long, slender, hairy outside, after flowering, constricted above the ovary, and often breaking off when the fruit ripens. *Cryptandra pimeleoides*. Hook.

Swanport, Spring Bay. Very closely allied to *S. leucophractum*, and possibly only a variety. Fl. Dec.

4. CRYPTANDRA.

Calyx-tube adherent at the base, the free portion persistent above the ovary and disk, 5-lobed. Petals 5, hood-shaped, enclosing the anthers, and inserted with the stamens at the top of the calyx-tube. Ovary wholly buried, or slightly prominent in the calyx-tube, 3-celled. Style entire or minutely 3-toothed. Capsule enclosed in the base of the persistent calyx-tube.

The genus is purely Australian, and closely allied to neighbouring genera. It differs from *Spyridium* chiefly in the calyx-tube being produced above the disk; and from *Stenanthemum* in the structure of the inflorescence, the flowers never being arranged in cymes, or collected into dense heads.

Habit sub-erect. Flowers usually several together ... 1. *C. amara.*
Habit prostrate. Flowers mostly solitary ... ... 2. *C. alpina.*

1. C. AMARA. *Sm.* Small, decumbent or sub-erect, much-branched, the branches wiry and often ending in a fine thorn. Leaves linear, 1-3 lines long, usually smooth, and the margins recurved. Flowers almost sessile, solitary within the bracts, but usually several together, forming short leafy spikes or racemes on the smaller branches. Calyx 2 lines long, campanulate, covered on the outer surface with minute down, the adnate portion of the tube very short, the lobes rather shorter than the tube. Ovary downy, partially free, but included in the calyx-tube. Disk not distinct. Fruiting-calyx about ¼ inch long, enclosing the capsule. *C. sieberi*, Hook.

North Esk River and Swanport. Distributed also in Eastern Australia from Queensland to South Australia. Fl. Dec.-Jan.

2. C. ALPINA, *Hook.* Small, prostrate, with numerous slender branches. Leaves linear, seldom more than 1 line long. Flowers mostly solitary at the ends of the branches, and surrounded by brown imbricate bracts, the inner ones often as long as the calyx-tube. Calyx broadly campanulate, downy outside, 2 lines long, with ovate-lanceolate lobes that are rather shorter than the tube. Disk undulate, downy, scarcely distinct from the summit of the ovary.

On the summit of the western mountains, about 3800 feet elevation, Great Lake, &c. Fl. Dec.-Feb.

5. DISCARIA.

Calyx campanulate or tubular above the ovary, shortly 4 or 5 lobed. Petals hood-shaped, inserted with the stamens at the base of the calyx-lobes, or absent. Stamens similar in number to the lobes of the calyx, and included in the petals when they are present. Disk annular in the base of the calyx-tube, the margins shortly free. Ovary more or less buried in the disk, 3-lobed, 3-celled. Style slender, with a shortly 3-lobed stigma. Fruit a drupe or capsule, 3-lobed.

The genus is chiefly South American. There is one Australian endemic species, and another in New Zealand.

D. AUSTRALIS, *Hook.* A small, branched shrub, the branches green and shining, the small ones reduced to spines of 1-1½ inch in length. Leaves clustered on short shoots, oblong-cuneate, usually under ½ inch. Flowers white, usually many together, pendulous, on stalks almost ½ inch long, solitary or clustered in the axils of the leaves, which soon fall off, leaving the flowers densely clustered under the spines. Calyx broadly campanulate, spreading to about 2 lines diameter. Petals narrow, hood-shaped. Fruit 2 to 3 lines diameter. *Colletia pubescens*, Brog.

South Esk River, Brighton, Kingston, Hamilton, &c.; also Eastern Australia. Fl. Nov.

ORDER XXIV.—*SAPINDACEÆ.*

Pistil of few, generally 3, blended carpels. The ovarian cavities generally, but not always, distinct. Stamens usually 8, inserted within the disk. Calyx of 4 or

5 united or free sepals. Corolla sometimes absent, when present similar in number of petals to the calyx, sometimes irregular. Fruit various. Often unisexual.

A large and tolerably well marked order, but with no very clearly definable characters. A wide distribution in all warm climates. Poorly represented in Tasmania.

DODONÆA.

Flowers (in Tasmanian species) often unisexual. Staminate flowers with normally 8 stamens in a 5-partite calyx. Pistillate flowers with a 3-6 celled, 3-6 winged ovary, and a simple style. Petals absent. Fruit capsular, with a broad wing to each carpel.

Leaves oblong-spathulate	1. *D. viscosa.*
Leaves linear	2. *D. ericifolia.*

1. D. VISCOSA. *L.* A tall shrub. Leaves alternate narrow, oblong, or spathulate, 2-3 inches long. Flowers in small, mostly terminal clusters, inconspicuous. Capsules broadly winged, $\frac{1}{2}$-$\frac{3}{4}$ inch.

Very abundant. Throughout Australia, New Zealand, and coastal places in both Hemispheres. Fl. Nov.-Dec.

2. D. ERICIFOLIA. *Don.* Small erect shrub, a few feet high. Leaves alternate, filiform, viscid, about 1 inch. Flowers in small terminal and axillary groups, apparently always unisexual. Capsules as in the last. *D. salsolifolia.* H.

River-banks in numerous situations. Fl. Dec.

ORDER XXV. *LEGUMINOSÆ.*

Pistil of a single carpel. Fruit a pod, usually opening in 2 valves. Calyx of 5 more or less united sepals. Corolla of 5, often unequal, petals, inserted on the calyx-tube. Stamens 10, or very numerous, inserted with the petals.

Sub-order *Papilionaceæ.* Flowers irregular, the upper petal in the median section the largest. Stamens 10.

i.	Leafless, or leaves entire	ii.
	Leaves divided	xi.
ii.	Stamens all free	iii.
	Stamens united in a tube	viii.
iii.	Leafless, stems slender, cylindrical	3. *Sphærolobium.*
	Leafy	iv.
iv.	Leaves in whorl-like clusters	1. *Oxylobium.*
	Leaves dispersed	v.
v.	Flowers small in axillary racemes	4. *Daviesia.*
	Flowers solitary, or in terminal clusters	vi.
vi.	Flowers with very broad standards, leaves filiform	7. *Dillwynnia.*
	Standards not unusually broad	vii.
vii.	Bracteoles and stipules absent	5. *Aotus.*
	Bracteoles present, stipules usually so	6. *Pultenæa.*
viii.	Flowers yellow	ix.
	Flowers blue	x.
ix.	Leaves opposite, veins prominent	8. *Plalylobium.*
	Leaves seldom opposite, and veins not prominent	9. *Bossiæa.*
x.	Flowers few in the axils	10. *Hovea.*
	Flowers numerous in axillary racemes	12. *Hardenbergia.*
xi.	Leaflets more than three	xii.
	Leaflets three	xiv.

xii.	Shrub. Flowers pink	16. *Indigofera.*
	Herbs	xiii.
xiii.	Leaflets five	19. *Lotus.*
	Leaflets many	14. *Swainsonia.*
xiv.	Flowers mostly single	xv.
	Flowers in loose racemes	xvi.
	Flowers in dense or loose heads	xvii.
xv.	Flowers pale yellow	2. *Gompholobium.*
	Flowers crimson	13. *Kennedya.*
xvi.	Flowers bluish in terminal racemes	11. *Desmodium.*
	Bluish in axillary racemes	14. *Glycine.*
	Flowers yellow	15. *Goodia.*
xvii.	Head dense, pod small, one-seeded	18. *Psoralea.*
	Sub-order *Mimoseæ.* Corolla regular, minute. Stamens indefinite	20. *Acacia.*

1. OXYLOBIUM.

Pod short, broad, swollen, 4 to many seeded. Keel as long as the wings. Stamens all free. Sepals united half their length.

Limited to Australia.

O. ELLIPTICUM, *R. Br.* Bush, 3-6 feet, erect. Leaves narrow, elliptical, simple, ½-1 inch long, margins recurved, under surface silky, alternate, but gathered in false whorls of 3 or 4. Flowers bright yellow, in rather dense terminal clusters.

Abundant: also in Victoria, New South Wales, and Queensland. Fl. Oct.

> Var. *angustifolium.* Generally larger, with leaves 2 inches long. *O. arborescens*, H.

2. GOMPHOLOBIUM.

Pod short, broad, swollen, 4 to many seeded. Keel usually exceeding the wings. Stamens all free. Sepals united at the base only.

Limited to Australia.

G. HUEGELII, *B.* A small, branched, depressed shrub. Leaves glaucous, trifoliate: the leaflets linear, ⅓-inch long. Flowers solitary or few, long-stalked, in the terminal axils. Corollas pale yellow, ¼ inch diameter. *G. pedunculare*, Lodd.

Common in heathy country; also in Victoria and New South Wales. Fl. Nov.

3. SPHÆROLOBIUM.

Pod small, globular, with 1 or 2 seeds. Keel about the length of the wings. Stamens free. The sepals very unequal, the upper pair much larger than the rest, and united.

Limited to Australia.

S. VIMINEUM, *Sm.* A small under-shrub, of few or many erect cylindrical branches, 6-18 inches high. Leaves obsolete. Flowers numerous, in terminal spike-like raceme: flowers small, yellow. *S. minus*, Lab.

Very common; also throughout Southern and Eastern Australia. Fl. Nov.

> VIMINARIA DENUDATA, *Sm.* Readily distinguished by the sepals, all being equal. Common throughout most parts of Australia. Is included in Mueller's "Census" as Tasmanian; but it is doubtful.

4. DAVIESIA

Pod flat, triangular, with acute angles, 2 or 1 seeded. Keel somewhat shorter than the wings, incurved. Stamens free. Sepals united for the greater part of their length, the upper pair generally enlarged.

Limited to Australia.

Leaves broad, flowers numerous ... ... 1. *D. latifolia.*
Leaves usually spiney, pungent, flowers seldom many together ... ... 2. *D. ulicina.*

1. D. LATIFOLIA, *R. Br.* A small, erect shrub, 2-5 feet. Leaves alternate, elliptic, simple, acute, veins strongly marked, margin wavy, about 2 inches. Flowers small, numerous, yellow and dark, in axillary racemes.

Very common: also Victoria and New South Wales. Fl. Oct.-Nov.

2. D. ULICINA, *Sm.* A small, erect, much-branched shrub, usually 2-3 feet. Leaves mostly all reduced to sharp spines, 2 lines to 1 inch long, sometimes broad, oblong, with a terminal spine. Flowers small, pale yellow, few together in the axils of the lateral branches. *D. umbellulata*, H.

Very common; also from South Australia to Queensland.

Many varieties have been recorded on the character of the leaf, but in Tasmania at least the variation appears merely due to local influence. Fl. Oct.-Nov.

5. AOTUS.

Pod small, round, somewhat flattened, 2-seeded. Keel incurved. Stamens all free. Sepals united half their length, about equal, the two upper ones combined to near their ends. Neither bracteoles nor stipules.

Limited to Australia. Closely allied to *Pultenæa* and *Dillwynia.*

A. VILLOSA, *Sm.* An erect shrub, from 3-6 feet. Leaves alternate, linear, usually obtuse, the margins sharply recurved, 2 lines to 1 inch long. Flowers light yellow, solitary or few together, in many axils towards the ends of the branches.

Very common; also throughout Eastern Australia. Fl. Oct.-Nov.

6. PULTENÆA.

Pod ovate, slightly flattened, 2-seeded. Keel incurved. Stamens all free. Sepals united to half their length, upper more combined and sometimes lengthened. Bracteoles present, usually on the calyx-tube. Stipules generally present.

Limited to Australia. Very close to neighbouring genera, and ill-defined. Differs from *Aotus* in the presence of bracteoles, and from *Dillwynia* chiefly in habit. All are shrubs.

Leaves broad.
  Leaves exceeding $\frac{1}{4}$ inch.
    Leaves cuneate-obcordate ... ... 1. *P. daphnoides.*
    Leaves oblong ... . 2. *P. stricta.*
  Leaves under $\frac{1}{4}$ inch.
    Leaves convex ... ... 3. *P. gunnii.*
    Leaves concave ... ... 11. *P. selaginoides.*
Leaves narrow.
  Leaves convex or margins recurved.
    Flowers clustered, stipules present ... ... 3. *P. gunnii.*
    Flowers clustered, stipules absent ... ... 5. *P. diffusa.*
    Flowers few, scattered, stalked ... ... 4. *P. pedunculata.*

Leaves flat or concave.
  Leaves blunt.
    Flower-heads dense ... ... 6. *P. subumbellata.*
    Heads loose or dispersed ... ... 11. *P. selaginoides.*
  Leaves pointed.
    Leaves prickly ... ... 9. *P. juniperina.*
    Leaves soft... ... ... 10. *P. humilis.*
Leaves terete or with closely incurved margins.
  Flowers in dense terminal heads.
    Leaves smooth, stipules small ... ... 7. *P. dentata.*
    Leaves hairy, stipules long ... ... 8. *P. hibbertioides.*
  Flowers few.
    Leaves blunt ... ... 12. *P. prostrata.*
    Leaves acute.
      Flowers axillary, solitary . ... 13. *P. fasciculata.*
      Flowers terminating short lateral branches ... 14. *P. tenuifolia.*

1. P. DAPHNOIDES, *Wend.* Erect, 2 to many feet, leaves obcordate or obcuneate with a minute point, ¼-1 inch long. Flowers bright yellow, the keel black, about ¾ inch long, numerous, in a dense terminal head.

Very common: also in South Australia, Victoria, and New South Wales. Fl. Oct.-Dec.

2. P. STRICTA, *Sims.* Very similar in general habit and details to the last, only all parts are smaller, and the leaves are oblong, rarely approaching an obcuneate form.

Common in numerous situations throughout the Island: also South Australia, Victoria, and New South Wales. Fl. Oct.-Dec.

3. P. GUNNII, *B.* A small, sub-erect, much-branched shrub. Leaves variable in shape, mostly ovate narrow-oblong to lanceolate, convex, 2-3 lines long. Flowers few together, in the terminal axils or forming a terminal head, yellow and purple, about ¼ inch in diameter.

Common in heathy country: also in Victoria and New South Wales. Fl. spring and summer.

Var. *bæckeoides.* Leaves orbicular, convex, about 1 line long. On dry hills.

4. P. PEDUNCULATA, *H.* Prostrate, spreading 2 or 3 feet. Leaves lanceolate, pointed, the margins slightly recurved, 2-4 lines long. Flowers mostly solitary, on rather long slender stalks, about ¼ inch in diameter, yellow, with a dark keel.

Common throughout the Island; also South Australia, Victoria, and New South Wales. Fl. spring and summer.

5. P. DIFFUSA, *H.* A small decumbent and ascending shrub. Leaves linear, the sharply recurved margins closely adnate, about 3 lines long. Stipules none. Flowers pale yellow, solitary in many of the terminal axils. The bracteoles rather large. Pod about 2 lines long, oblong, hardly flattened. *Phyllota diffusa,* F. v. M.

George's Bay: and said to occur in other parts in sandy situations. This plant is intermediate between *Pultenæa* and *Phyllota*, and perhaps nearer the latter. Fl. Sept.

6. P. SUBUMBELLATA, *H.* A small, erect, slightly-branched shrub. Leaves spathulate or narrow, oblong, blunt, flat or concave, semi-erect, ¼-½ inch long. Stipules minute. Flowers yellow, with purple-black keels, many together, in dense terminal heads.

Very common in heaths at all altitudes: also in Victoria and New South Wales. Fl. Oct.-Dec.

7. P. DENTATA, *Lab* A small, erect, rigid shrub. Leaves concave or involute, linear, or nearly filiform, $\frac{1}{4}$-$\frac{3}{4}$ inch. Flowers rather small, yellow, with darker keels; rather numerous, in small, dense heads, terminal and terminating numerous small lateral branches. Bracts numerous, conspicuous, brown, 2-lobed. *P. pimeleoides*. H.

Found in most parts, often in rather dry situations; also Victoria and New South Wales. Fl. Oct.

8. P. HIBBERTIOIDES, *H.* A small, much-branched, spreading shrub. Leaves filiform, margins incurved, $\frac{1}{2}$-1 inch long, mostly curved upwards. Flowers fairly large, yellow, with rather dark keels, numerous, in dense heads, terminating the numerous branches. Bracts numerous, brown, and bifid.

Near Launceston, Lefroy, George Town; also in Victoria and New South Wales. Fl. Oct.-Nov.

9. P. JUNIPERINA, *Lab.* An erect, spreading, much-branched shrub, usually 3-5 feet. Leaves linear to narrow-ovate, concave, acutely pointed, mostly $\frac{1}{2}$-inch. Flowers about $\frac{1}{2}$ inch diameter, yellow, with dark keels, few in the upper axils.

Abundant; also in Victoria and New South Wales. Fl. Oct.-Jan.

> Var. *latifolia*, leaves broader than in type, with cordate bases. *P. cordata*, Grah.

10. P. HUMILIS, *B.* A small, decumbent ascending shrub, of few inches to $1\frac{1}{2}$ foot. Leaves numerous, softly villous, linear, acute, slightly concave, about $\frac{3}{4}$ inch long. Flowers orange-yellow, usually numerous in the upper axils, but often the axis well extended beyond the flowers. Petals do not appear to spread, as in other members of the genus.

Epping Forest; also South Australia, Victoria, and New South Wales. Fl. Oct.-Dec.

11. P. SELAGINOIDES, *H.* In habit and foliage similar to *P. subumbellata*, only smaller. Flowers similar in detail, but less condensed into a head.

Avoca, St. Paul's River. Fl.

> The specimens in Gunn's collection, and also specimens identified by von Mueller, depart in no reasonable amount from common forms of *P. subumbellata*, H., and I have only maintained the species because it is possible I have not been fortunate enough to yet meet with the typical plant.

12 P. PROSTRATA, *B.* A small, decumbent, spreading shrub, 1-2 feet. Leaves filiform, but channelled above, obtuse, 2-4 lines long. Stipules rather small and broad, acuminate. Flowers small, solitary, terminating short lateral branches. Bracts brown, numerous, obtuse or nearly so, some are bifid. *P. polyota*, F. v. M.

Ross, Avoca, near Brighton; also South Australia, Victoria, and New South Wales. Fl. Nov.

13. P. FASCICULATA, *B.* A small, decumbent, straggling shrub, often only a few inches long. Leaves filiform, channelled above with acute points, 2-4 lines long. Stipules rather long, filiform, acute. Flowers few, solitary in the axils towards the ends of the branches. Bracts small, not clothing the calyx. Bracteoles subulate.

Western Mountains, Mt. Pelion West Arthur's Lake, Great Lake; also Victoria and New South Wales. Fl. Dec

14. P. TENUIFOLIA, *R. Br.* A small decumbent, spreading shrub, 1-2 feet. Leaves narrow, linear, concave, acute, or nearly so, about 3 lines long. Stipules large, lanceolate, acuminate. Flowers usually solitary, and terminating short

lateral branches. Bracts usually numerous, and enclosing the calyx. Bracteoles oblong.

George's Bay, East and North Coast; also Southern Australian Coast. Fl. Oct.-Jan.

7. DILLWYNNIA.

Pod small, nearly spherical, 2-seeded. Standard very broad. Stamens all free. Sepals united about half their length, upper pair longest. Bracteoles inserted below the calyx. Stipules absent or rudimentary. Small shrubs, with filiform alternate leaves, channelled on the upper surface.

Limited to Australia. Closely allied to *Pultenæa*, *Aotus*, and *Phyllota*.

Flowers numerous, axillary, nearly sessile ... .. 1. *D. floribunda.*
Flowers many in the upper axils, shortly stalked .. 2. *D. cinerascens.*
Flowers few at ends of branches, stalks fairly long ... 3. *D. ericifolia.*

1. D. FLORIBUNDA, *Sm.* 1-2 feet high, branched at the base only. Leaves ½-1 inch long, not very slender. Flowers red to yellow-orange, very numerous in the axils of the greater part of the branch. Calyx-lobes rather short, nearly obtuse

Very common; also South Australia, Victoria, New South Wales, and Queensland. Fl. Oct.-Dec.

2. D. CINERASCENS, *R. Br.* Very similar to *D. floribunda* in all details, but more slender, the leaves excessively so. Flowers less numerous, and gathered more towards the ends of the branches. Calyx described as less turbinate at the base, but this is not always apparent in Tasmanian specimens. Plant somewhat ashey-grey.

Very common in dry places; also throughout Southern Australia. Fl. Oct.-Dec.

3. D. ERICIFOLIA, *Sm.* Very similar to the last, only taller, more branched, and not grey. Flowers few in the upper axils, on comparatively long stalks. Minute stipules usually present, but this and all the other characters somewhat variable. *D. glaberrima*, H.

Common in heaths; also South Australia, Victoria, New South Wales, and Queensland. Fl. Oct.-Dec.

8. PLATYLOBIUM.

Pod very flat, the dorsal suture extended as a wing, valves coiled back after separating, but not parting at the suture, 4-8 seeded. Stamens united in a sheath round the style. Two upper sepals greatly exceeding the lower ones.

Limited to Australia. Closely allied to *Bossiæa*.

Leaves triangular.
  Bracts small . . . . .. 1. *P. triangulare.*
  Bracts enclosing stalk and base of calyx 2. *P. obtusangulum.*
Leaves ovate . 3. *P. formosum.*

1. P. TRIANGULARE, *R. Br.* A small, wiry, procumbent shrub, 1-2 feet. Leaves opposite, sessile or nearly so, triangular, with usually pungent points, ½-1 inch long. Flowers few in the terminal axils, stalks about ¼ inch long. Bracts small, at the base only. Pod about 1 inch long, nearly ½ inch broad. *P. murrayanum*, H.

Eaglehawk Neck, North-East and North Coast, Islands of Bass Straits; also in South Australia and Victoria. Fl Oct.-Dec.

2. P. OBTUSANGULUM, *H.* Very similar to the last, with usually the same acute corners to the leaves. Flower-stalks short, and clothed with rather large brown bracts. *P. triangulare*, Sims.

Cambridge, and said to be common in many parts, but overlooked; also South Australia and Victoria. Fl. Oct.-Dec.

3. P. FORMOSUM, *Sm.* An erect, much-branched, spreading shrub, 3-6 feet. Leaves opposite, mostly ovate, 1-2 inches long, strongly vein-marked. Flowers few together in the upper axils, shortly-stalked. Pod about $1\frac{1}{2}$ inch long.

Launceston, North and East Coast to Swanport; also Eastern Australia. Fl. Nov.

9. BOSSIÆA.

Pod flat, seeds 4 to 8, valves revolute, and separating when old. Stamens uniting in a tube round the style. Upper pair of sepals usually greatly exceeding the others.

Limited to Australia.

Leaves opposite ... ... 1. *B. cordigera.*
Branches flat, nearly leafless ... ... 4. *B. riparia.*
Leaves acute ... ... 2. *B. cinerea.*
Leaves blunt ... ... 3. *B. prostrata.*

1. B. CORDIGERA, *B.* A small, wiry, procumbent shrub, 1-2 feet Leaves nearly sessile, ovate to nearly orbicular, about 2 lines long, in numerous pairs along the short lateral branches. Flowers usually 1-3 in the terminal axils, on long slender stalks. Pods $\frac{3}{4}$ inch long.

Common in many parts in the North; also in Victoria. Fl. Oct.-Jan.

2. B. CINEREA, *R. Br.* An erect, branched, rather rigid shrub, mostly 1-4 feet high. Leaves ovate to lanceolate, tapering into a sharp point, $\frac{1}{2}$-1 inch long. Flowers numerous in the upper axils, stalk slender, $\frac{1}{2}$ inch long. Corolla pale yellow and purple-black, about $\frac{1}{2}$ inch diameter. Pod $\frac{1}{2}$-$\frac{3}{4}$ inch long.

Very common in heaths; also in South Australia, Victoria, and New South Wales. Fl. Sept.-Nov.

> Var. *rigida.* Smaller, branches spinous. Leaves 2 lines long, broadly oblong, with a short recurved point. Flowers with a greenish tinge. Very close to *B. microphylla*, Sm. The Rocks, near New Norfolk.

3. B. PROSTRATA, *R. Br.* A very small decumbent shrub, usually of few inches. Leaves broadly oblong, blunt, $\frac{1}{4}$-$\frac{1}{2}$ inch long. Flowers few in the upper axils, on long slender stalks, yellow. Pod about $\frac{3}{4}$ inch long.

Very common in dry places; also Southern and Eastern Australia. Fl. Oct.-Nov.

4. B. RIPARIA, *Cunn.* A small, rigid, erect, shrub, 1-3 feet. Branches flattened. Leaves none, or obsolete. Flowers rather numerous at the nodes, shortly-stalked, yellow with a purple-black keel. Pod $\frac{1}{2}$-$\frac{3}{4}$ inch. *B. ensata*, H.

Common in numerous situations; also South Australia, Victoria, and New South Wales. Fl. Sept.

10. HOVEA.

Pod nearly spherical, but slightly flattened, with usually 2 seeds. Stamens united, except above and sometimes also below, round the style. Upper pair of sepals much larger and longer than the lower ones.

Limited to Australia.

Leaves about $\frac{1}{2}$ inch, green beneath ... ... 1. *H. heterophylla.*
Leaves 2 inches, pale beneath ... ... 2. *H. longifolia.*

1. H. HETEROPHYLLA, *Cunn.* Branches decumbent from a woody base, a few inches long, sometimes sub-erect. Leaves from narrow to broadly-oblong, $\frac{1}{2}$-$\frac{3}{4}$ inch long. Flowers blue, rather small, solitary or few in the upper axils.

Very common in dry heathy places; also South Australia, Victoria, New South Wales, and Queensland. Fl. Sept.

2. H. LONGIFOLIA, *R. Br.* An erect, branched shrub, often many feet high. Leaves narrow, oblong, obtuse, or with a short mucronate point, mostly 1-2

inches long, pale or rusty beneath. Flowers blue or nearly white, solitary, few, or in short racemes in many axils towards the ends of the branches. *H. purpurea*, Lodd., included.

In numerous situations, mostly on dry hills; also throughout Australia, except in western districts. Fl. Sept.

11. DESMODIUM.

Pod flattened, mostly 3-6-seeded, constricted between the seeds, and generally each part falling away when mature with its contained seed. Stamens all, or the lower 9, combined in a tube round the style. Sepals united in the lower part, upper pair exceeding the others.

A large tropical and sub-tropical genus.

D. VARIANS, *Endl.* Branches few from a woody base, decumbent, about 1 foot long. Leaflets 3, from linear to nearly orbicular, ¼-1 inch. Stipules membranous, small. Flowers in slender terminal racemes, pale blue or white. *D. gunnii*, H.

North-West Coast; also Victoria to Queensland, Islands of Pacific. Fl. Nov.-Dec.

12. HARDENBERGIA.

Pod linear, many-seeded, upper stamen free, the rest united in a tube. Sepals united nearly their entire length. Keel comparatively short.

Limited to Australia.

H. MONOPHYLLA, *B.* A twining shrub, the branches often many feet long. Leaves ovate, blunt, 2-3 inches long. Flowers blue, numerous, in numerous axillary racemes. Pod rather flattened, 1-1½ inch long. *H. ovata*, B.; *Kennedya monophylla*, Bent.

Frogmore, near Richmond; also South Australia to Queensland. Fl. Sept.-Nov

13. KENNEDYA.

Pod linear, many-seeded. Upper stamen free, the rest united. Sepals united for half their length, nearly equal. Keel exceeding the standard.

Limited to Australia. Closely allied to *Hardenbergia* and *Glycine*.

K. PROSTRATA, *R. Br.* A small, procumbent, creeping shrub, mostly 1-2 feet. Leaves trifoliate; leaflets mostly orbicular, ½-¾ inch long. Flowers pink or crimson, 1 inch long, solitary or two together, on a slender axillary stalk. Pod cylindrical, the valves twisting after bursting.

Very common in dry and sandy situations; also extra-tropical Australia. Fl. Nov.

14. GLYCINE.

Pod linear, somewhat flattened, many-seeded. Stamens united in a tube round the style, or the upper one free. Sepals united to about half their length, the upper pair longer and united nearly to their ends

A tropical and sub-tropical genus, differing from neighbouring genera in little but habit.

G. CLANDESTINA, *Wendl.* A small, twining, herb-like undershrub, of few inches to 1½ foot. Leaves trifoliate, long-stalked; leaflets of lower leaves broadly obovate, ¼-½ inch, upper ones narrower to linear, 1-1½ inch long. Flowers usually many, in loose, long-stalked, axillary racemes, blue or white. Pod ¾-1 inch long. *Leptocyamus clandestinus*, B.

Common in central and northern grassy bush; also throughout Australia. Fl. Dec.

Var. *latrobeana* Flowers rather larger and more crowded. *L. tasmanicus*, H.

15. GOODIA.

Pod broad, flat, few-seeded. Stamens united in a tube, except at the upper surface. Sepals united to about half their length, the upper pair exceeding the rest.

Limited to Australia.

G. LOTIFOLIA, *Sal.* An erect, much-branched shrub, 3-6 feet. Leaves trifoliate, leaflets broadly to narrowly obovate. Flowers numerous, yellow, in erect, loose racemes. Pod stalked, ¾-1 inch long, ½ inch wide. *G. pubescens*, Sims (included).

Found in numerous places throughout Tasmania; also throughout Australia, except the extreme north. Fl. Oct.

16. INDIGOFERA.

Pod (in the Tasmanian plant) cylindrical, many-seeded. Stamens united round the style, the upper one free. Sepals about equal, united nearly to their ends.

A large tropical and sub-tropical genus.

I. AUSTRALIS, *Willd.* A sub-erect, spreading shrub, from 1-4 feet. Leaves with many pairs of oblong leaflets, each ¾-1 inch long. Flowers numerous, pink, in loose, erect, axillary racemes.

Common throughout Tasmania; also throughout Australia, except the extreme north. Fl. Nov.

17. PSORALEA.

Pod small, ovate, 1-seeded. Stamens united, or the upper one nearly free. Sepals united to half their length, equal, or the lower one longest.

A large genus, chiefly distributed in the warmer temperate climates of both Hemispheres.

P. ADSCENDENS, *F. v. M.* A creeping, ascending perennial, 1-2 feet. Leaves trifoliate, long-stalked; leaflets narrow or rather broadly oblong acute. Flowers pink or white, in a more or less dense ovate head of about 1 inch in length on a very long stalk. *P. gunnii*, H.

Woolnorth, St. Marys; also in South Australia, Victoria, and New South Wales. Fl. Oct.-Nov.

18. SWAINSONIA.

Pod (in the Tasmanian species) oblong, inflated, many-seeded. Sepals equal, united rather more than half their length. Stamens united, but the upper one free.

A large genus of Australian plants with one representative in New Zealand.

S. LASSERTIFOLIA, *D.C.* A sub-erect perennial, about 1 foot high. Leaves about 4 inches long, with many pairs of oblong or ovate leaflets about ½ inch long. Flowers pale purple, usually many in long-stalked axillary racemes. Pod nearly 1 inch long.

Woolnorth, Islands of Bass Straits; also in South Australia, Victoria, and New South Wales. Fl. Nov.

19. LOTUS.

Pod narrow, cylindrical, many-seeded. Stamens united, the upper one free. Sepals united for half their length, equal.

A genus of very wide distribution in the Eastern Hemisphere, chiefly characterised by its habit.

Flowers yellow	1. *L. corniculatus.*
Flowers pink	2. *L. australis.*

1. L. corniculatus, *Linn.* A small variable perennial, decumbent to erect, a few inches to 1 foot, glabrous to rather profusely hairy. Leaves of 5 leaflets, the lower pair close to the stem; leaflets acute, ovate to linear, mostly ¼-½ inch long. Flowers in small, terminal, long-stalked umbels, yellow. Pod 1-1½ inch long

Very common; also in South Australia, Victoria, and New South Wales, and in temperate climates of northern parts of the Eastern Hemisphere. Fl. spring and summer.

2. L. australis, *And.* Similar to *L. corniculatus* in general habit. Leaflets narrow, obovate to spathulate, ¼-1 inch long, blunt. Flowers pink or white.

North Coast to George's Bay; also throughout Australia and the Islands of South Pacific. Fl. Dec.-Feb.

The following *Papilionaceæ* have been introduced chiefly as weeds of cultivation and fodder plants from Europe:—

Ulex europeus, *Linn.* Erect, much-branched, very spiney shrub, with numerous bright yellow flowers.

Ononis arvensis, *Linn.* Procumbent spreading shrub. Leaves trifoliate. Flowers pink.

Vicia. A genus closely allied to the Pea. Pod oblong, flat, many-seeded. Leaves with numerous opposite pairs of leaflets, usually terminating in a tendril.

V. sativa, Linn. Flowers rather large, nearly sessile, axillary, pinkish-purple.

V. hirsuta, Koch. Peduncles elongated. Plant hairy. Pod 2-seeded.

V. tetrasperma, Mœnch. Peduncle elongated. Plant hairless or nearly so. Pod 4-6-seeded.

Trifolium. Herbs with trifoliate leaves and dense, usually spherical flower-heads. Pods usually 1-seeded, enclosed in the calyx.

T. pratense, Linn. Head 1-1½ inch in diameter. Flowers pinkish-purple. Calyx-teeth all equal.

T. medium, Linn. Stalk alternately curved. Lower calyx-teeth longest.

T. arvense, Linn. Erect, small. Flower-heads oblong. Calyx-lobes long, feathery.

T. repens, Linn. Creeping, flowers white.

T. resupinatum, Linn. Flowers small. Heads shortly stalked. Calyces inflated, white. Leaflets obovate.

T. fragiferum, Linn. Heads long-stalked. Calyces inflated, often pink. Leaflets oblong.

T. glomeratum, Linn. Heads small, sessile, axillary. Flowers pink.

T. agrarium, Linn. Heads small, shortly stalked. Flowers yellow, persistent, the standard longitudinally furrowed.

T. procumbens, Linn. Similar to the last, only flower-heads smaller, and standard scarcely furrowed.

Melilotus. A genus very similar to *Trifolium*, but the flowers are arranged in more or less elongated spike-like racemes.

M. officinalis, Linn. Flowers yellow. Usually 2-4 feet high. Pod irregularly veined.

M. arvensis, Willd. Very similar, usually smaller. Pod transversely wrinkled.

M. parviflora, Desf. Seldom a foot high. Leaflets narrow, truncate, otherwise similar to the last.

M. alba, Linn. Flowers white. Tall, sometimes 9 feet high.

MEDICAGO. A genius differing from the smaller *Trifoliums* in the pod being coiled, or, even if 1-seeded, more or less curved.

M. sativa, Linn. Erect. Flowers blue, pink, or white. Pod many-seeded, coiled.

M. denticulata, Willd. Flowers yellow, few. Pod coiled, many-seeded, toothed or smooth. Stipules toothed.

M. maculata, Willd. Similar to the last, only leaflets each with a dark spot in the centre.

M. minima, Linn. Similar to *M. denticulata*, only smaller, the stipules not toothed.

M. lupulina, Linn. Similar to *M. denticulata*, only softly hairy. Pods 1-seeded, dark, curved.

20. ACACIA.

Pod various, many-seeded. Stamens very numerous. Sepals very small, united at the base. Petals free in all Tasmanian species, all equal and minute. In numerous species the leaves only attain perfection in the seedlings, after which the secondary petioles and pinnules are lost, and the petiole becomes spinescent, or flattened, and leaflike, and it is technically known as a *phyllode*. A reversion to the primitive type often tends to occur after injury, most particularly in *A. melanoxylon*.

A large genus of all tropical and sub-tropical situations.

i.	Leaves undivided, pungent	ii.
	Leaves undivided, blunt	vii.
	Leaves divided	xiv.
ii.	Flowers in simple globose heads	iii.
	Flowers in ovoid or elongated spikes	vi.
iii.	Leaves linear or broadest in the middle... ...	iv.
	Leaves broadest towards the base	v.
iv.	Pod flat, blunt, about 1 inch long	1. *A. siculiformis.*
	Pod not flat, narrow, $1\frac{1}{2}$-3 inches long	2. *A. diffusa.*
v.	Leaves narrow, pod not often constricted ...	3. *A. juniperina.*
	Leaves rather broad towards the base. Pod constricted between seeds	4. *A. vomeriformis.*
vi.	Spike dense, elongated, rarely small and ovoid .	5. *A. verticillata.*
	Spike loose, rarely short and closely axillary ...	6. *A. riceana.*
vii.	Flowers in simple dense spherical heads, 1-3 together in the axils	viii.
	Flowers seldom so disposed	ix.
viii.	Leaves with two midribs	7. *A. verniciflua.*
	Leaves with 1 midrib	8. *A. stricta.*
ix.	Flower-heads mostly racemed or panicled ...	x.
	Flowers in spikes	xiii.
x.	Branches angled	xi.
	Branches cylindrical	xii.
xi.	Leaves straight, acute	9. *A. suaveolens.*
	Leaves curved, blunt	10. *A. crassiuscula.*
xii.	Flowers small, in dense spherical heads ...	11. *A. melanoxylon.*
	Flowers 2-4 in heads	12. *A. myrtifolia.*
xiii.	Leaves oblong	13. *A. sophoræ.*
	Leaves nearly linear	14. *A. mucronata.*
xiv.	Leaflets narrow, oblong	15. *A. discolor.*
	Leaflets nearly filiform	xv.
xv.	Pods constricted between the seeds	16. *A. decurrens.*
	Pods hardly constricted	17. *A. dealbata.*

1. A. SICULIFORMIS, *Cunn.* Erect, rigid, usually 3-4 feet. Leaves alternate, thick, linear or lanceolate, sharply pointed, ¼-¾ inch long. Heads globular, 2-3 lines diameter, solitary, shortly-stalked in the upper axils. Sepals free, narrow, ciliate. Pod oblong, flat, not constricted, ¾-1 inch long. *A. stuartiana*, Hook., and var. *bossiæoides*, B., included.

Western mountains, Bass Straits; also in Victoria and New South Wales. Fl. Sept.-Oct.

2. A. DIFFUSA, *Lindl.* Habit and foliage very similar to *A. siculiformis*, but usually less erect. Leaves variable, in breadth from ½-1 inch. Inflorescence also as in that species, but often three or four heads are borne in the same axil. Sepals united, lobes short and broad Pod 2-3 inches, rather narrow, not flattened.

Abundant: also in Victoria and New South Wales. Fl. Oct.

3. A. JUNIPERINA, *Willd.* Rigid, erect, few feet high. Leaves alternate, linear, thick, and rigid, the base broadest, tapering to the acute point, ½-¾ inch long. Flowers in small, globular, stalked, axillary heads. Pod flat, curved, about 1½ inch long, narrow, and often constricted between the seeds.

Swanport, George's Bay, George Town; also Victoria, New South Wales, and Queensland. Fl. Sept

4. A. VOMERIFORMIS, *Cunn.* A diffuse, usually prostrate shrub, often not exceeding 1 foot. Leaves narrowly triangular, tapering into an acute point, ¼-½ inch long. Heads globular, axillary-stalked, usually solitary. Pod flat, 1 inch long, 2 lines broad, constricted between the seeds. *A. gunnii*, B.

Very common; also in South Australia, Victoria, and New South Wales. Fl. Sept.

5. A. VERTICILLATA, *Willd.* Erect, much-branched, often many feet high. Leaves gathered in whorl-like clusters, variable in breadth, from filiform to broadly lanceolate, ¼-¾ inch long. Flowers numerous, in dense or loose axillary spikes. Pod linear, slightly flattened, 2-3 inches long.

Abundant: also in South Australia, Victoria, and New South Wales. Fl Sept.-Nov.

Var. *latifolia.* Leaves nearly oblong, and hardly verticillate. Near to and often referred to *A. oxycedrus*, Sieb. Reminé, West Coast.

Var. *ovoidea.* Small and decumbent. Leaves ¼ inch, very narrow. Spikes short, small, ovoid-stalked. *A. ovoidea*, B. George's Bay and North Coast; also in South Australia and Victoria.

6. A. RICEANA, *Hens.* Erect, much-branched, spreading and drooping, 6-10 feet. Leaves variable, from filiform and tapering to the acute point to broadly lanceolate and mucronate, ½-1½ inch long. Flowers in comparatively long loose interrupted axillary spikes. Pod very narrow, 2-3 inches long.

Moist places, chiefly in the south. Fl. Sept.-Nov.

Var. *axillaris.* Leaves filiform acute, spikes very short. *A. axillaris*, B. North-East Coast.

7. A. VERNICIFLUA, *Cunn.* An erect, branched shrub or small tree. Leaves alternate, lanceolate, obtuse, with 2 main ribs, 2-4 inches long. Flowers in small, spherical, pedunculate axillary heads. Pods narrow, slightly flattened, 1½-2 inches long.

Very common: also South Australia, Victoria, and New South Wales. Fl. Sept.-Oct.

8. A STRICTA, *Willd.* Very similar in all details to the last, only seldom exceeding 4-5 feet, much branched at the base, leaves with a single midrib. Pods very slender, often 3 inches long.

Very common in pasture land: also in Victoria and New South Wales. Fl. Sept.-Oct

9. A. SUAVEOLENS. *Willd.* An erect, slightly branched shrub, with angled branches, 5-6 feet. Leaves alternate, linear, flat, 1-ribbed, acutely pointed, 3-6 inches long. Flowers in spherical heads, gathered in small loose axillary racemes. Pod broad and flat, about 1 inch long.

Common in heathy country; also in South Australia, Victoria, New South Wales, and Queensland. Fl. Aug.-Sept.

10. A. CRASSIUSCULA, *Wendl.* Very similar to the last, only leaves rather curved, and not acutely pointed. Pod long, linear, and contracted between the seeds.

Islands of Bass Straits; also New South Wales and Queensland. Fl. Oct.

11. A. MELANOXYLON, *R. Br.* A small or large much-branched tree, with dark rough bark. Leaves broadly or narrowly oblong, usually very obtuse, narrowing into a stalk at the base, no distinct mid-rib, usually 2 or 3 main veins equally prominent, 3-6 inches long. Flowers in dense spherical heads, solitary, or more often in axillary racemes. Pod rather narrow, blunt, curved, 2-4 inches long.

Very common; also in South Australia, Victoria, and New South Wales. Fl. Oct.-Nov.

12. A. MYRTIFOLIA, *Willd.* A small branched shrub, often only 2-3 feet high. Leaves oblong or narrow, obovate, mucronate, mid-rib prominent, margin vein-like, about 1 inch long. Flowers relatively large, few together, in stalked axillary heads or racemes. Pod linear, curved, acute, about 2 inches long.

Very common in dry situations; also throughout extra-tropical Australia. Fl. Aug.-Dec.

13. A. SOPHORÆ, *R. Br.* A small tree, much-branched, spreading, decumbent at the base. Leaves narrow oblong, mostly obtuse, 2-6 inches long. Flowers very numerous, in rather long loose axillary spikes. Pod narrow, curved, constricted between the seeds, 4-6 inches long. *A. longifolia*, Willd. (partly).

Common on coasts; also in South Australia, Victoria, New South Wales, and Queensland. Fl. Aug.-Sept.

14. A. MUCRONATA, *Willd.* An erect, much-branched shrub, 10-12 feet. Leaves linear, obtuse, main veins mostly equal, seldom one assuming the character of a mid-rib, 2-3 inches long. Flowers in long loose axillary spikes. Pod very narrow, straight or nearly so, not constricted between the seeds, 3-4 inches long. *A. longifolia*, Willd. (partly).

Common in the western, northern, and north-eastern divisions; also in Victoria.

> Var. *linearis.* Very similar to the type, but the leaves narrower, mostly with a mid-rib, and acute. Pod still more slender. *A. linearis*, Sims. Circular Head and George's Bay; also in Victoria and New South Wales. Fl. Nov.

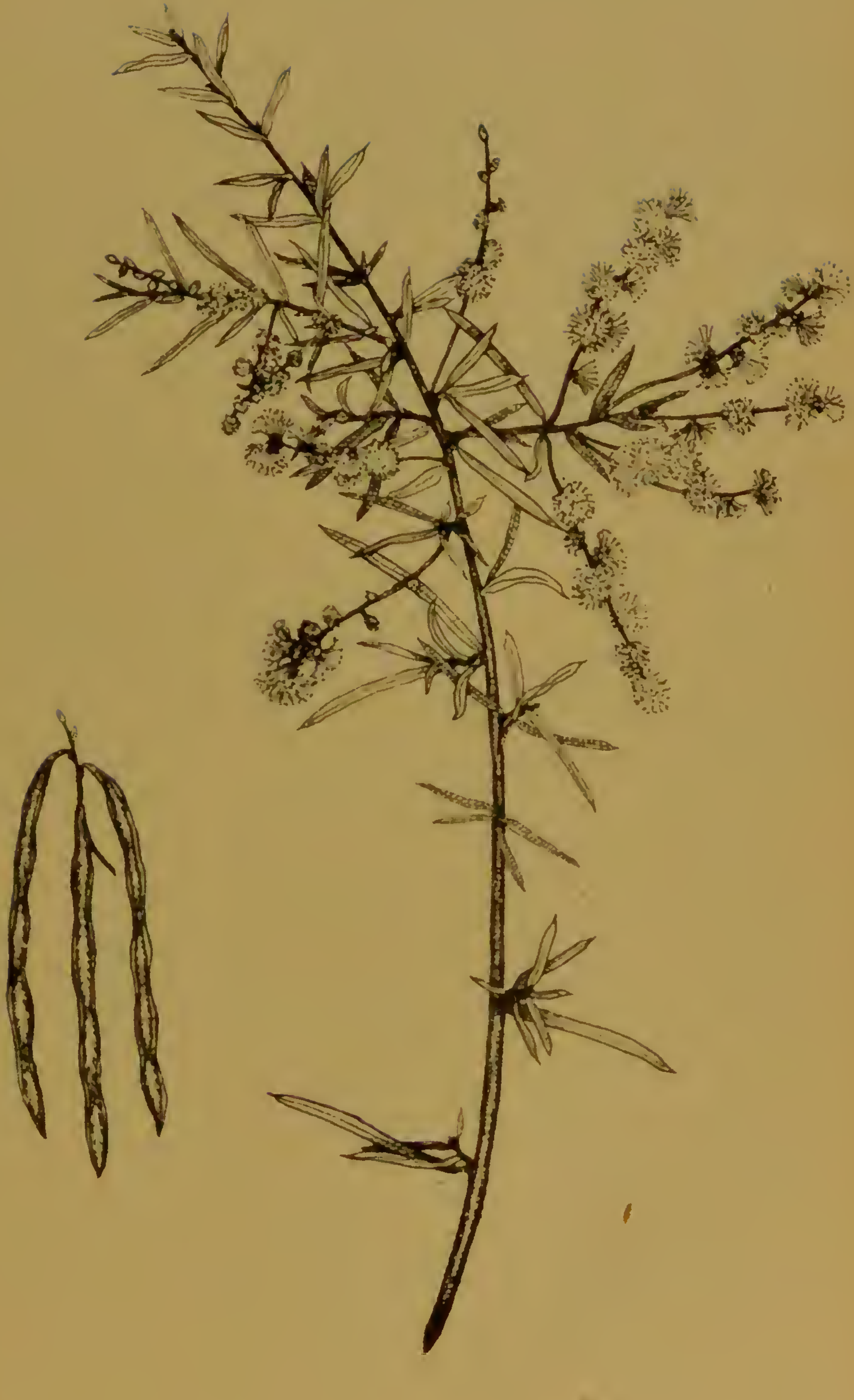
15. A. DISCOLOR, *Willd.* An erect, much-branched, spreading shrub, usually 5-7 feet high. Leaves twice divided, the ultimate leaflets not very numerous, narrow oblong, about $\frac{1}{4}$ inch long. Flowers in small globular heads, many in loose axillary racemes. Pod very flat, 2 inches long, $\frac{3}{4}$ inch wide.

Very common on coast lands; also Victoria and New South Wales. Fl. Mar.-Apr.

16. A. DECURRENS, *Willd.* Usually a small tree. Leaves twice divided, ultimate leaflets very numerous, filiform, 1-2 lines long, dark green, smooth or very slightly hairy. Flowers in small globular heads, many in rather long loose axillary racemes. Pod 2-3 inches long, rather flat, $\frac{1}{4}$ inch broad, constricted between the seeds.

The Tasmanian plant here described differs somewhat from the type, and is usually treated as var. *mollis.* Von Mueller considered it a form of *A. mollissima*, Willd.

Very common; also throughout South and Eastern Australia. Fl. Nov.-Dec.



ACACIA RICEANA. *Hensl.*

17. A. DEALBATA, *Link.* Differing but slightly from the above. Leaves more hairy, and the pod flat, ½ inch broad, and seldom constricted between the seeds. *A. mollissima* (partly), von Mueller.

Fl. Aug.-Sept.

ORDER XXVI. *ROSACEÆ.*

Carpels free in Tasmanian forms, many, few, or solitary, on an enlarged convex or concave torus. Sepals usually 5 inserted on a floral tube. Petals usually 5 or none. Stamens from 2 to very numerous, with the petals inserted into the floral tube at the base of the sepals.

Sub-order *Potentilleæ.* Carpels few or numerous, inserted on a convex or conical torus.

Styles hooked at the tip, fruit dry	1. *Geum.*
Styles straight or nearly so, fruit succulent	2. *Rubus.*

Sub-order *Poterieæ.* Carpel solitary at the base of a concave or tubular floral tube — 3. *Acæna.*

1. GEUM.

Pistil of numerous 1-seeded carpels. Styles long, coiled at the ends. Fruit-carpels dry. Stamens numerous. Petals 5.

A common genus of both Hemispheres.

Leaves divided or deeply-lobed	1. *G. urbanum.*
Leaves reniform ...	2. *G. renifolium.*

1. G. URBANUM, *Linn.* Herbaceous, erect, 1-2 feet. Leaves deeply divided, the upper ones into free segments. Flowers yellow. Petals about ½ inch long.

In many places in the North? also in South Australia, Victoria, and New South Wales, Europe, and throughout Asia. Fl. Nov.-Jan.

2. G. RENIFOLIUM, *F. v. M.* Herbaceous. Leaves from a creeping stock, long-stalked, reniform, 1-4 inches wide. Flowers white, 1-1½ inch diameter.

Adamson's Peak, Mount La Perouse. Fl. Dec.

2. RUBUS.

Carpels few or many. Style straight. Fruit-carpels with a succulent mesocarp. Stamens numerous. Petals 5.

A large genus, of world-wide distribution.

Small, herbaceous .	1. *R. gunnianus.*
Tall, spreading, prickly	2. *R. parvifolius.*

1. R. GUNNIANUS, *H.* A small, creeping, procumbent perennial, often but few inches long. Leaves on rather long stalks, usually consisting of two smaller segments close beneath a terminal, dentate, rhomboid segment, about 1 inch long. Flowers few, solitary, axillary, about ¼ inch diameter, white or yellowish, mostly if not all functionally unisexual. Carpels few. Fruiting-carpels usually few, scarlet, and each ⅓ inch diameter.

Common on nearly all mountain summits. Fl. Nov.-Dec.

2. R. PARVIFOLIUS, *Linn.* A prickly shrub, with long weak branches climbing over the undergrowth. Leaves stalked, mostly divided into 2 pairs of toothed segments and a single larger toothed or lobed terminal segment, pale, nearly white beneath. Flowers few, in long-stalked axillary and terminal racemes or panicles, pink, ½ inch diameter. Fruiting-carpels many, about 1 line diameter, crimson. *R. macropodus*, Ser.

Very common, also South and East Australia and in Eastern Asia. Fl. Dec.-Jan.

The following European plants have been introduced mostly as weeds of cultivation:—

RUBUS FRUTICOSUS, *Linn.* Similar but larger than *R. parvifolius.* Leaves not pale beneath. Fruit black.

ROSA RUBIGINOSA, *L.* Floral tube very concave, forming a hollow cup nearly closed above. Petals pink. Fruit formed of the red floral tube containing the dry carpels.

POTENTILLA ANSERINA, *Linn.* Spreading herb. Leaves much divided, white. Flowers white. Sepals 8-10, united at the base only. Torus convex. Fruit-carpels numerous, dry, 1-seeded.

POTENTILLA REPTANS, *Linn.* Similar to the last, only leaves green, in 5 coarsely-toothed leaflets, arising from the end of a slender stalk. Flowers yellow.

3. ACÆNA.

Pistil of a single 1-seeded carpel. Floral tube tubular around the pistil. Stamens 2-10, inserted at the top of the tube. Petals none.

The genus has a wide distribution in the Southern Hemisphere, and appears also in North America.

Flowers in small clusters along the upper part of the stem ... ... 1. *A. ovina.*
Flowers in spherical terminal heads ... ... 2. *A. sanguisorbæ.*

1. A. OVINA, *Cunn.* A small decumbent ascending herb. Leaves 2-4 inches long, much divided into opposite leaflets, the largest near the end; leaflets ¼-½ inch long, deeply lobed, pale beneath. Stem erect, with very few small leaves, 1-2 feet. Flowers clustered in the upper half, very small, green and brown. Sepals mostly 4-6. Stamens variable in number, usually 8-10. Fruit of the persistent floral tube, on which are developed barbed spines.

Very common; also throughout extra-tropical Australia, New Zealand, and South America. Fl. Oct.-Nov.

2. A. SANGUISORBÆ, *Vahl.* Very similar to the last, only of a more creeping habit. Leaflets larger and more toothed than lobed, not pale beneath except where silky hairy. Flowers in a spherical dense head, head on a long or short stalk. Calyx-lobes usually 4. Stamens 2 Spines of the fruit mostly ½ inch long, barbed one arising outside the base of each sepal.

Very common; also throughout South and East Australia, New Zealand, and South America. Fl. Oct.-Nov.

Var. *montana.* Leaves very silky beneath. Spines of fruit about 1 line long. *A. montana.* H.

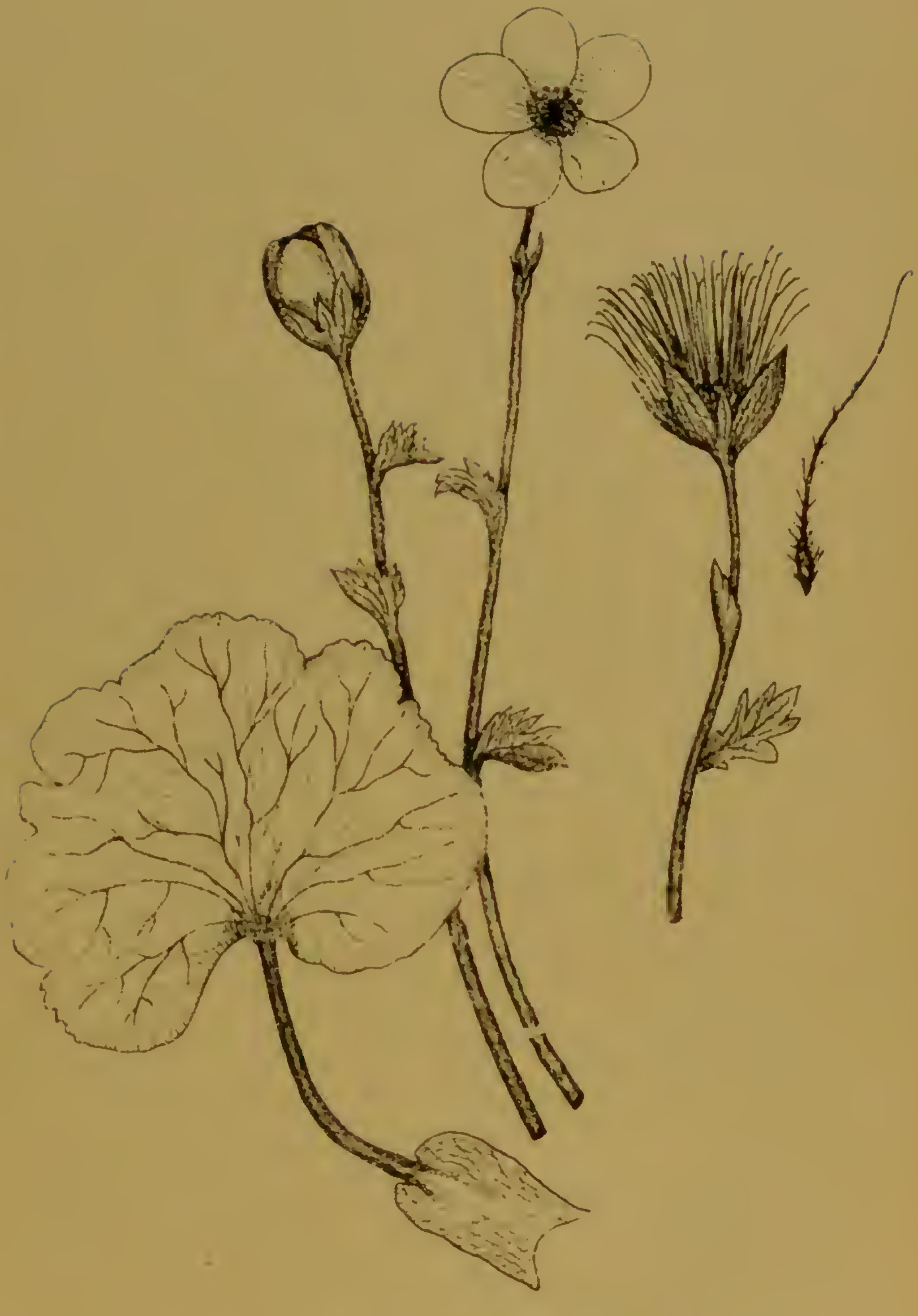
The following have been introduced from Europe:—

POTERIUM SANGUISORBA, *Linn.* Similar in general habit to *Acæna sanguisorbæ*, but more erect. Sepals longer. Stamens numerous. Fruit not developing spines.

ALCHEMILLA ARVENSIS, *Scop.* A little decumbent annual, 1-2 inches long. Leaves small, deeply divided. Flowers minute, green, in little axillary clusters.

ORDER XXVII.—*SAXIFRAGACEÆ.*

Pistil of 2-5 blended carpels. Ovarian cavities in typical plants half immersed, and connate with the floral tube. Stamens as many as the sepals to very numerous, inserted with the petals into the top of the floral tube. Sepals and petals 4 or 5.



GEUM RENIFOLIUM. *F. v. M.*

[illegible]

A large order, of the widest distribution. Closely related to *Rosaceæ* and ill-defined.

Leaves alternate.	
Flowers $\frac{3}{4}$-1 inch in diameter	1. *Anopterus.*
Flowers 2 lines diameter	2. *Tetracarpæa*
Leaves opposite.	
Petals minute	3. *Anodopetalum.*
Petals large	4. *Eucryphia.*
Leaves in whorls	5. *Bauera.*

1. ANOPTERUS.

Pistil of 2 blended carpels, with a common cavity and parietal placentas, immersed at the base only. Sepals, petals, and stamens 6-9.

A genus of two Australian plants

A. GLANDULOSUS. *Lab.* A tall shrub, with spreading branches. Leaves oblong, dentate, 4-6 inches long, clustered at the ends of the branches. Flowers white, $\frac{3}{4}$ inch in diameter, in axillary racemes.

Common in forests, ascending to a considerable altitude. Fl. Oct.

2. TETRACARPÆA.

Pistil of 4 nearly free carpels, hardly immersed. Sepals 4, free. Petals 4. Stamens 8, hypogynous.

A genus consisting of one Tasmanian species.

T. TASMANICA, *H.* A small, erect, often unbranched shrub, about 1 foot. Leaves oblong, obtuse, dentate, about 1 inch long. Flowers about 2 lines broad, many in terminal erect racemes.

Found in most mountainous districts. Fl. Nov.-Dec.

3. ANODOPETALUM.

Pistil of 2 blended carpels, with distinct cavities, superior, but surrounded by a concave fleshy floral tube. Sepals 4 or 5, nearly free. Petals same number, very small. Stamens twice as many.

Confined to the one Tasmanian plant.

A. BIGLANDULOSUM, *Cunn.* A tree of an erect or often horizontal habit. Leaves opposite, oblong, obtusely toothed, shortly stalked, 1-2 inches. Flowers few, often solitary, shortly stalked, axillary, green, $\frac{1}{4}$ inch diameter. Sepals $1\frac{1}{3}$ line long. Petals very small, linear. Fruit fleshy, $\frac{1}{4}$ inch long, 1-seeded.

Common in forests in the south and west. Fl. Nov.-Dec.

4. EUCRYPHIA.

Pistil usually of 5 blended carpels, cavities distinct, not at all immersed. Fruit capsular, the carpels each splitting in two valves, leaving the placentas as a central column. Sepals 4, free, but adhering, caducous. Petals 4. Stamens numerous.

A small order, extending to Australia and South America. Like *Tetracarpæa*, not typically *Saxifrageous*, but probably more nearly allied to this than any other order. It has also been referred to *Rosaceæ*, and even *Hypericineæ*.

E. BILLARDIERI, *Spach.* From a small decumbent bush to a small tree. Leaves oblong to elliptical, obtuse, opposite, pale beneath, $\frac{1}{2}$-2 inches long. Petals white, $\frac{1}{2}$-$\frac{3}{4}$ inch long, obovate. *E. milligani*, H., included.

Common in the west and south-west. Fl. Dec.

5. BAUERA.

Pistil of 2 blended carpels with distinct cavities, only immersed at the very base. Stamens very numerous, inserted on a fleshy enlargement of the torus.

Genus is limited to a few Australian plants.

B. RUBIOIDES, *Andr.* A small shrub, with stringy, much-elongated branches, usually climbing over the undergrowth. Leaves trifoliate, opposite, very shortly stalked; the leaflets lanceolate, 2-6 lines long. Flowers solitary, on long stalks in the upper axils. Sepals usually 6-7, free to the base, lanceolate. Petals pink or white, the same number, obovate, 3-6 lines, sometimes double.

Very common; also Southern and Eastern Australia. Fl. spring and summer.

A specimen, unfortunately barren, from Moore's Look-out, West Coast, is erect, from 1-2 inches high, and leaflets 1 line long.

ORDER XXVIII.—*CRASSULACEÆ.*

Pistil of few, nearly free, many-seeded carpels, the floral tube very short round the base. Sepals and petals usually few, free, and equal. Stamens usually twice as many, inserted with the petals into the top of the tube. Fruit of several free follicles.

A common order of both Hemispheres, distinct from *Saxifragaceæ* only in habit.

TILLÆA.

Sepals, petals, stamens, and carpels normally 3 or 4, and all free.

A world-wide genus.

Flowers under 1 line, axillary.
Flowers many together ... ... 1. *T. verticillaris.*
Flowers solitary.
Leaves under 1 line ... ... 2. *T. purpurata.*
Leaves exceeding 2 lines ... ... 3. *T. recurva.*
Flowers 1 line, many in a panicle ... ... 4. *T. macrantha.*

1. T. VERTICILLARIS, *D. C.* A small succulent herb, of a dull pinkish or pale yellow-green colour, erect, and seldom exceeding 4 inches. Leaves in small clusters, fleshy, thick, linear, 1-2 lines long. Flowers in dense axillary clusters, each on a very short stalk. Sepals narrow, about $\frac{1}{2}$ line long, usually 4. Petals still smaller, narrow. Carpels not exceeding the calyx, very blunt.

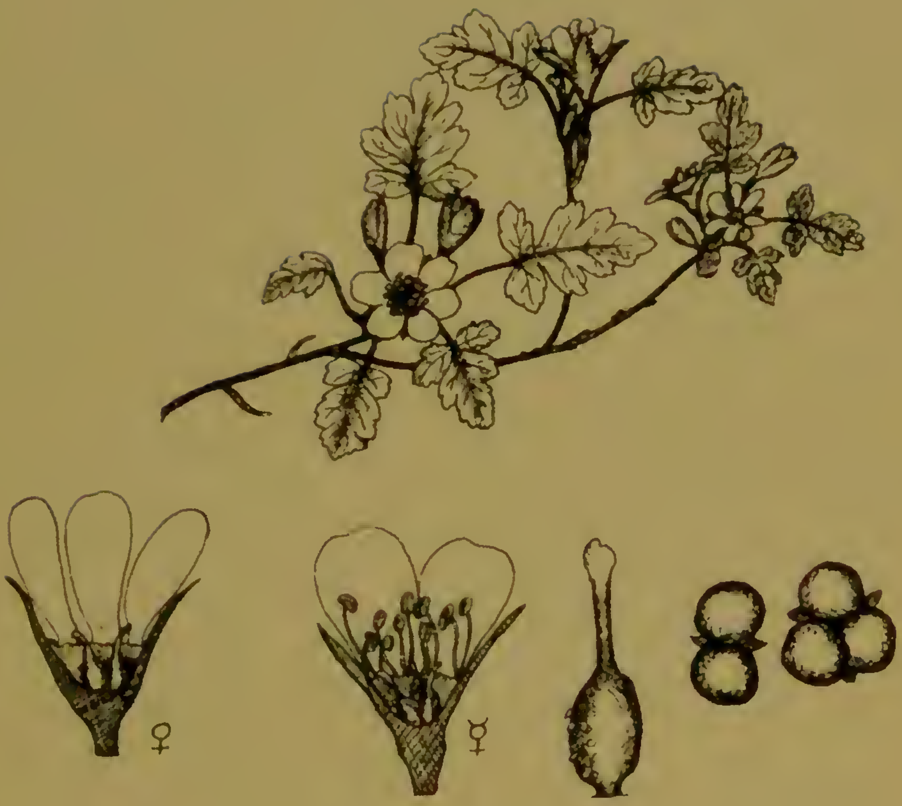
Very common in dry places. Distributed throughout Australia. It also occurs in New Zealand and South America. Fl. all the year.

2. T. PURPURATA, *Hook.* A very slender decumbent annual, of $\frac{1}{2}$-1 inch. Leaves linear, connate at the base, 1-1$\frac{1}{2}$ or rarely 2 lines long. Flowers minute, slender, solitary, each on a stalk somewhat longer than the leaves, but occasionally shorter. Petals about $\frac{1}{2}$ line long. Sepals shorter. Carpels blunt, not exceeding the sepals.

Mt. Direction, Great Lake, Formosa, South Esk River. It occurs also in New South Wales Victoria, South Australia, and Western Australia, and extends also to New Zealand. Fl. Sept.-Nov.

3. T. MACRANTHA, *Hook.* An erect, branched annual, 2-3 inches high. Leaves linear, 1-3 lines long, connate at the base. Flowers larger than in the other species, numerous, and forming a broad panicle. Sepals lanceolate, 1$\frac{1}{2}$ line long. Petals about the same length. Fruiting-carpels nearly as long as the sepals, rounded, but bearing the permanent base of the style

Very common in places. George Town, Brighton, near Hobart. It occurs also in Victoria and South Australia. Fl. Sept.-Nov.



RUBUS GUNNIANUS. *H.*

4. T. RECURVA, *Hook.* A slender, densely-tufted plant of small growth, but often living in water, and then lengthening to a foot or more. Leaves linear, slightly connate, often exceeding $\frac{1}{4}$ inch. Flowers few, solitary in the axils towards the ends of the stems, on slender stalks nearly as long as the leaves. Sepals about $\frac{1}{4}$ line long. Petals about the same length. Fruiting-carpels about $\frac{3}{4}$ line long. *P. intricata*, Nees.

Very common in wet places. It occurs throughout Australia. Fl. Dec.

ORDER XXIX.—*DROSERACEÆ.*

Pistil of few intimately blended carpels, with usually a common ovarian cavity, slightly, or not at all, sunk in the torus. Sepals arising from the torus, close to the pistil, usually 4 or 5. Petals and stamens usually of the same number, and inserted at their bases.

A small order of *Saxifrageous* herbs, kept in a separate order for their similar and peculiar habit.

Found in most parts of the world.

DROSERA.

Ovarian cavity common. Placentas parietal. Fruit a capsule. Leaves bearing numerous stalked glands that secrete a proteid digesting fluid.

Distribution as wide as the order.

Leaf laminæ longer than broad.
  Leaf long, spathulate. Flowers 1-2 together 1. *D. arcturi.*
  Leaf short, spathulate. Flowers numerous, in a raceme .. .. 2. *D. spathulata.*
  Leaf forked ... 3. *D. binata.*
Leaf laminæ peltate or nearly so.
  Minute. Flowers under 1 line 4. *D. pygmæa.*
  Erect. Sepals hairless ... 5. *D. auriculata.*
  Erect. Sepals hairy 6. *D. peltata.*
  Twining or tangled. Flowers large. Sepals hairy 7 *D. menziesii.*

1. D. ARCTURI, *H.* Small, erect. Leaves radical, 2-4 inches long, spathulate. Flowers 1 or few, on a slender stalk 2-6 inches long, white, $\frac{1}{2}$-$\frac{3}{4}$ inch diameter.

All southern and western mountains from La Perouse to Ironstone; also Victoria, New South Wales, and New Zealand. Fl. Dec.

2. D. SPATHULATA, *Lab.* Leaves in a small, dense, radical tuft, obovate to spathulate, $\frac{1}{2}$-$\frac{3}{4}$ inch long. Flowers numerous, about 2 lines long, in a spike-like raceme, on a slender stalk 4-6 inches long.

Kingston, George's Bay, Rocky Cape, in wet heaths; also South and East Australia, New Zealand, and probably Eastern Asia. Fl. Feb.

3. D. BINATA, *Lab.* Leaves all radical, 4-8 inches long, the upper portion divided into two equal linear lobes. Flowers white, $\frac{1}{2}$-$\frac{3}{4}$ inch across, few or many in a small loose panicle, on a stalk 6 inches to 1$\frac{1}{2}$ foot long.

Found in numerous situations in wet heaths; also South and East Australia and New Zealand. Fl. Dec

4. D. PYGMÆA, *D. C.* Very small. Leaves forming a radical rosette, red, orbicular, mostly under 1 line. Flowers single, under 1 line long, on a slender stalk $\frac{1}{2}$-1 inch long.

Very common in heaths; also in South Australia, Victoria, New South Wales, and New Zealand. Fl. summer.

5. D. AURICULATA, *Back.* Erect, slender, unbranched, 6-12 inches high. Leaves in a tuft at the base, and alternately disposed on the stem, stalk slender

lamina reniform or semi-lunate, 2-4 lines diameter. Flowers few, terminal, $\frac{1}{4}$ inch diameter, pink or white. Sepals quite glabrous.

Very common; also South and East Australia and New Zealand. Fl. spring and summer.

6. D. PELTATA, *Sm.* The ordinary form not differing in general details from *D. auriculata*, except that the sepals are copiously hairy and the stem leaves are sometimes attached by the lower surface.

Very common, chiefly in pasture land; also throughout South and East Australia. Fl. spring and summer.

> Var. *gracilis.* Slender, and climbing amongst undergrowth. *D. gracilis*, H.
>
> Var. *foliosa.* Stem short, leaf laminæ very broadly reniform. *D. foliosa*, H.

7. D. MENZIESII, *R. Br.* Stems very long and slender, tangling in the undergrowth. Leaves all dispersed on the stems, at least in the mature plant, orbicular peltate, 2-3 lines diameter, on long slender stalks. Flowers $\frac{3}{4}$ inch diameter, pink or white, few in a loose terminal panicle or raceme. *D. planchoni*, H. (included).

Clarence Plains, George's Bay, North Coast; also extra-tropical Australia. Fl. Oct.

ORDER XXX.—*HALORAGEÆ.*

Pistil quite inferior, of 2-4 1-seeded carpels, blended, but the ovarian chambers usually distinct. Sepals 2-4, sometimes absent. Petals the same. Stamens usually 2-8.

A world-wide order.

Plant terrestrial.
  Leaves dispersed along the stem, sessile or nearly so ... ... 1. *Haloragis.*
  Leaves radical, long-stalked ... ... 4. *Gunnera.*
Plant aquatic or creeping in mud.
  Leaves opposite, stalked, entire ... ... 5. *Callitriche.*
  Leaves alternate with many linear lobes ... ... 2. *Meionectes.*
  Leaves whorled or opposite and sessile, if alternate, entire ... ... 3. *Myriophyllum.*

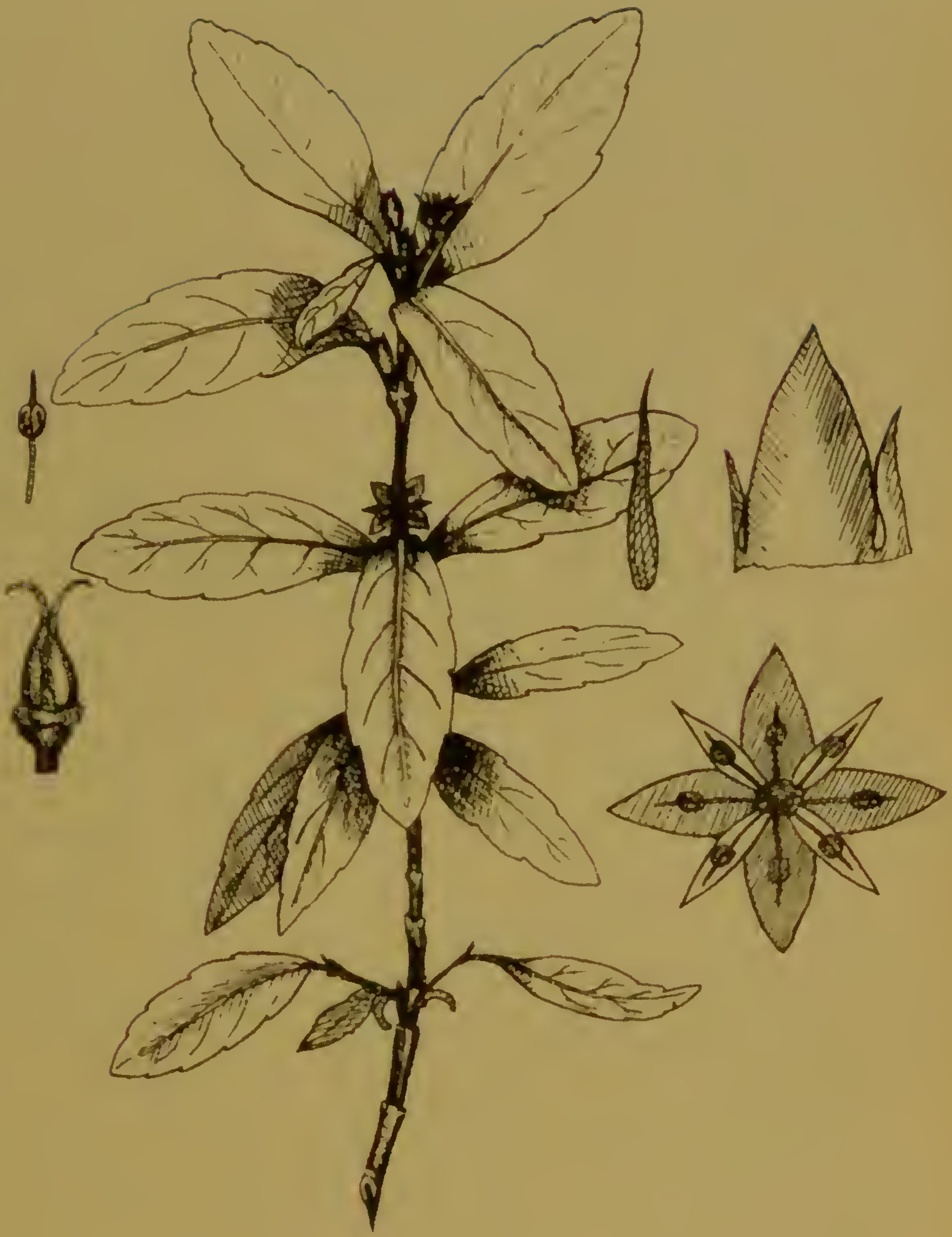
1. HALORAGIS.

Sepals and petals usually 4. Stamens 8. Fruit the indurated pistil. Rough herbs.

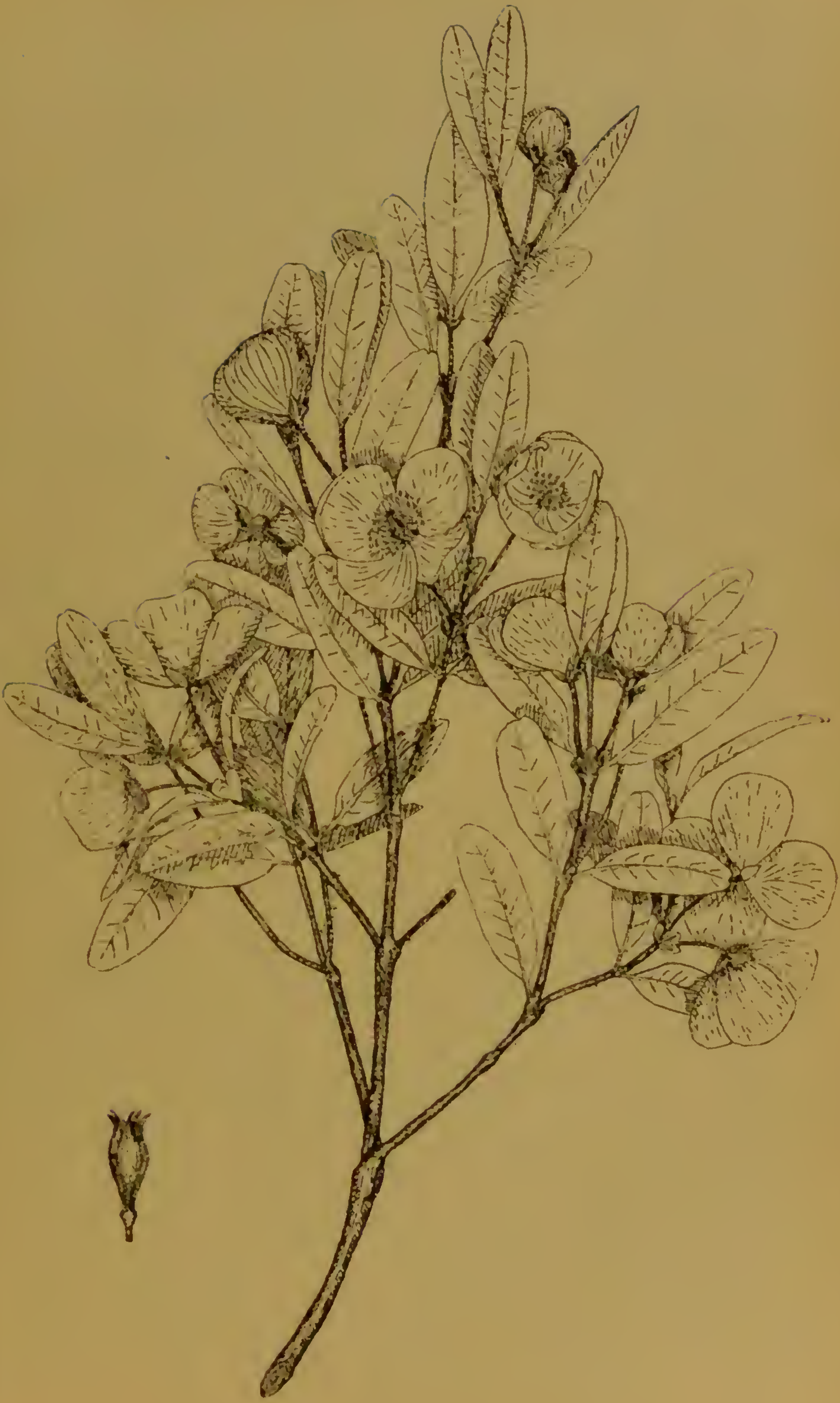
Widely distributed in the Southern Hemisphere.

Leaves lobed or linear... ... ... 1. *H. heterophylla.*
Leaves broad, opposite.
  Flowers minute ... ... 2. *H. micrantha.*
  Flowers 1-2 lines long.
    Plant depressed, fruit polished ... ... 5. *H. depressa.*
    Plant erect, fruit tuberculate.
      Leaves broad, cordate ... ... 3. *H. teucrioides.*
      Leaves narrow, narrowed at the base ... 4. *H. tetragyna*

1. H. HETEROPHYLLA, *Brong.* Erect, 4-8 inches. Leaves opposite, or sometimes alternate, variable, but mostly linear, with few more or less prominent



ANODOPETALUM BIGLANDULOSUM. *Curt.*



EUCRYPHIA BILLARDIERI. Sp.

lobes, $\frac{1}{2}$-1 inch long. Flowers in the upper axils, the leaves gradually reduced to bracts. Petals about 1 line long. *H. ceratophylla*, Endl.; *H. pinnatifida*, H.

Glenorchy, Brighton, North Coast; probably widely dispersed, but overlooked; also throughout all Australia, except the extreme west. Fl. summer.

2. H. MICRANTHA, *R. Br.* Small, smooth, depressed, the ends of the branches ascending. Leaves opposite, nearly orbicular, and sessile, 1-4 lines. Flowers minute, in many loose spikes, ending the branches. Petals $\frac{1}{2}$ line long. Fruit prominently 8-nerved, smooth, and shining.

Abundant at all altitudes: also Southern Australia, New Zealand, and Eastern Asia. Fl. Nov.-Jan.

3. H. TEUCRIOIDES, *Gray.* Erect, branched, rough, with scabrid emergences, 1-2 feet. Leaves opposite, ovate, toothed, with cordate base, $\frac{1}{2}$-1 inch long, upper ones bract-like containing the flowers. Flowers solitary in the axils, forming loose, terminal, leafy spikes, $1\frac{1}{2}$ line long. Fruit tuberculate and obscurely 8-ribbed. *H. gunnii*, H.

Very common: also throughout extra-tropical Australia. Fl. spring and summer.

4. H. TETRAGYNA, *H.* General habit and structure the same as the last, only generally smaller, 6-9 inches high. Leaves narrow, oblong, narrowed at the base.

Very common in dry situations: also in Southern and Eastern Australia and New Zealand. Fl. spring and summer.

5. H. DEPRESSA, *Walp.* Depressed and ascending, smooth-polished to somewhat hispid, the general character and details of *H. teucrioides*, only the fruit prominently ribbed and polished.

Very common on mountains above 2000 feet; also Victoria, New South Wales, Queensland, and New Zealand. In Southern Tasmania at and below 2000 feet this plant suspiciously approaches the typical forms of *H. teucrioides*. Fl. Oct-Dec.

2. MEIONECTES.

Pistil of 2 carpels, flattened. Sepals and petals 2. Stamens 4.

Confined to the one species.

M. BROWNII, *H.* Depressed, creeping, often submerged. Leaves alternate, divided into few linear lobes, $\frac{1}{2}$-1 inch long. Flowers very shortly stalked, few in the upper axils. Sepals minute. Petals 1 line long. Fruit 1 line, flattened, flask-shaped. *Haloragis meionectes*, F. v. M.

North-west, west, and south-west parts: also extra-tropical Australia. In fresh-water pools. Fl. Dec.

3. MYRIOPHYLLUM.

Flowers nearly always unisexual. Stamens 4-8. Sepals short, 4. Petals 4. Pistil of 2 or 4 1-seeded carpels, indurating and separating when ripe. Aquatic herbs. Flower small, in the upper axils.

World-wide. Fresh-water plants.

Leaves in whorls.
  Upper leaves broad, usually 4 in the whorl ... 1. *M. elatinoides.*
  Upper leaves narrow, usually 6 in the whorl ... 2. *M. variifolium.*
Leaves opposite, entire.
  Leaves oblong .. .. 3. *M. amphibium.*
  Leaves linear ... ... 4. *M. pedunculatum.*
Leaves alternate, linear, minute ... . 5. *M. integrifolium.*

1. M. ELATINOIDES, *Gaud.* Often 1-2 feet. Leaves in whorls, usually of 4, submerged ones $1\frac{1}{2}$-2 inches long, divided into numerous capillary lobes. Aerial

leaves $\frac{1}{4}$-$\frac{1}{2}$ inch long, broadly ovate. Flowers, the staminate ones with scarcely-perceptible sepals, well-developed petals, and 8 stamens; pistillate ones without any perianth.

Risdon and other rivulets running into the Derwent, Huon, George's Bay, George Town, &c.; also in South Australia, Victoria, and New South Wales, and New Zealand to South America. Fl. Nov.

2. M. VARIIFOLIUM, *H.* A few inches to 1-2 feet. Leaves in whorls, usually of 5 or 6, submerged ones 1 inch, divided into filiform lobes, aerial leaves linear. $\frac{1}{3}$ inch long. In the staminate flowers the sepals are small but apparent. Petals well-developed. Stamens 8. Pistillate flowers as in the last.

Very common in fresh water; also throughout Australia and New Zealand. Fl. Nov.

3. M. AMPHIBIUM. *Lab.* Small, creeping, 3-4 inches. Leaves opposite, oblong, entire, 3 lines long. Staminate flowers with minute sepals. Petals narrow, 1 line long. Stamens 8. Pistillate flowers very small. Calyx obsolete. Petals none. Fruit smooth or nearly so.

Recherche, Southport, &c., in mud; also in South Australia and Victoria. Fl. summer.

4. M. PEDUNCULATUM, *H.* Very similar to the last, only the leaves smaller, and narrow-linear. Flowers smaller, the staminate ones sometimes stalked. Fruit rough.

Very common, especially in muddy pools, at a considerable altitude; also Southern Australia and New Zealand. Fl. Nov.

. M. INTERGRIFOLIUM, *H.* Very small, depressed, and ascending. Leaves alternate, linear, 1-2 lines long. Staminate flowers minute. Sepals obsolete. Petals $\frac{1}{4}$ line long. Stamens 4. Pistillate flowers without perianth, $\frac{1}{4}$ line long.

Probably only towards the North Coast, possibly overlooked elsewhere; also hroughout extra-tropical Australia. Fl. spring.

4. GUNNERA.

Flowers mostly unisexual. Sepals 2-3, minute. Petals none. Stamens 2. Pistil of 1 1-seeded carpel. Styles filiform, 2. Fruit a minute drupe.

Widely distributed in cool southern climates; not appearing on the mainland of Australia.

G. CORDIFOLIA, *H.* Small, creeping by stolons. Leaves numerous, tufted, long-stalked, broadly cordate, dentate on the margin, 1 inch long. Staminate flowers arranged in clusters towards the end of a common erect stalk, minute. Pistillate flowers numerous, in a spherical head, on a very short common stalk. Fruit about 1 line long.

In alpine situations in northern and central districts. Fl. Nov.

5. CALLITRICHE.

Flowers unisexual. Perianth quite absent. Male flower of a solitary stamen; female of 4 blended 1-seeded carpels. Styles 2. Fruit flat, with a double rim.

An anomalous genus, placed here by Mueller and Bentham, but made an independent order by the former in his "Census"; also, in his "Flora of the British Isles," Bentham places it between the *Euphorbias* and *Nettles*. Other botanists place it in *Euphorbiaceæ*.

C. VERNA, *Linn.* Small, floating or creeping. Leaves opposite, shortly stalked, oblong, 2-6 lines long, or, when submerged, narrower. Flowers minute, usually 2 together, sessile in the axils.

Very common in fresh water; also throughout Australia and New Zealand Generally distributed through most parts of the world. Fl. Nov.

ORDER XXXI. *MYRTACEÆ.*

Pistils of few, 1-10, blended carpels. Ovarian cavities distinct, sunk in, and connate with the floral tube. Sepals usually 5. Petals the same, sometimes much modified. Stamens usually very numerous. Trees or shrubs with gland-dotted leaves.

An order of both Hemispheres.

i.	Stamens 5 or 10	ii.
	Stamens numerous	iii.
ii.	Flowers 1 line diameter	2. *Thryptomene.*
	Flowers 2-4 lines diameter	3. *Bæckia.*
iii	Flowers sessile, in spikes. Capsules persistent on the branches	iv.
	Flowers otherwise disposed	v.
iv.	Stamens all free from one another	6. *Callistemon.*
	Stamens united in 5 bundles...	7. *Melaleuca.*
v.	Petals united in a hard deciduous operculum ...	8. *Eucalyptus.*
	Petals normal	vi.
vi.	Sepals ending in long hair-like points	1. *Calythrix.*
	Sepals normal...	vii.
vii.	Stamens not exceeding the petals	4. *Leptospermum.*
	Stamens twice as long as the petals	5. *Kunzea.*

1. CALYTHRIX.

Ovary 1-celled. Sepals 5, united by a membranous expansion at the base, the apex prolonged and filiform. Petals 5. Stamens indefinite. Fruit 1-seeded, not much changed after flowering.

A rather large, purely Australian genus, developed chiefly in Western Australia.

C. TETRAGONA, *Lab.* Erect, branched shrub, 2-4 feet. Leaves numerous, filiform, 3-angled, ¼ inch long. Flowers numerous or few, stalked in the upper axils, pink or white. Calyx bristles ⅙ inch long. Petals ¼ inch long.

Common in damp heaths; also throughout extra-tropical Australia. Fl. Oct.-Dec.

2. THRYPTOMENE.

Ovary 1-celled. Sepals 5, united at the base. Petals 5, persistent. Stamens 5 or 10. Fruit not much changed from the flowering state.

Limited to Australia, and chiefly West Australia.

T. MICRANTHA, *H.* Small sub-erect shrub. Leaves oblong, blunt, ¼ inch long. Flowers solitary or few in the axils, nearly sessile, about 1 line long. Petals minute. Stamens 5.

North-East Coast from Schouten Island, Bass Straits, Macquarie Harbour (?). Confined to Tasmania. Fl. Nov.

3. BÆCKIA.

Ovary 2-3-celled. Sepals 5. Petals 5. Stamens 5 or 10. Fruit capsular, with 1 or 2 seeds in each cell.

Chiefly Australian, but also distributed from New Caledonia through Eastern Archipelago to Southern China.

Flower-stalks longer than leaves	1. *B. diffusa.*
Erect. Leaves pungent	2. *B. leptocaulis.*
Decumbent. Leaves blunt	3. *B. gunniana.*

1. B. DIFFUSA, *Sieb.* Small, wiry, prostrate, ascending. Leaves opposite, narrow or broadly oblong, concave, blunt or nearly so, 2-3 lines long, nearly

sessile. Flowers solitary in the upper axils, usually rather numerous, stalks usually ½ inch long, with a pair of bracteoles about the middle. Sepals very short and broad, continuous with the floral tube. Petals broad, pink or white, spreading, 2-3 lines long. Stamens 10. *B. thymifolia*, H., included.

Very common in heaths; also in South Australia, Victoria, and New South Wales. Fl. spring and summer.

2. B. LEPTOCAULIS, *H.* Wiry, erect, much-branched, 1-3 feet. Leaves broadly filiform, grooved above, pungent, ¼-½ inch long. Flowers on short stalks in the upper axils, as in *B. diffusa*, but about half the size and only 5 stamens.

In western district from Macquarie Harbour to north of the Pieman River. Fl. Oct.-Dec.

3. B. GUNNIANA, *Schau.* Much-branched, prostrate or sub-erect, 2-3 feet long. Leaves 1-2 lines long, cylindrical, flattened on the upper surface, blunt. Flowers shortly stalked, similar to *B. leptocaulis*, but the stamens varying from 7-10.

Common on mountain-tops; also in Victoria and New South Wales. Fl. Jan.-Feb.

4. LEPTOSPERMUM.

Ovary usually 5, rarely 10-celled. Sepals 5. Petals 5. Stamens numerous, in a single row, free, not exceeding the petals.

Ovary usually 10-celled ... ... 1. *L. lævigatum.*
Ovary 5-celled.
  Leaves pungent ... ... 2. *L. scoparium.*
  Capsule woody, tomentose, convex above 3. *L. lanigerum.*
  Capsule fleshy, smooth, nearly flat ... 4. *L. flavescens.*
  Capsule flat, only the valves protruding ... 5. *L. myrtifolium.*
  Capsule convex, woody, glabrous, procumbent 6. *L. rupestre.*

1. L. LÆVIGATUM, *F. v. M.* A tall shrub, erect, much-branched, spreading, and often drooping, 10-20 feet high. Leaves oblong or oblong-spathulate, ½-¾ inch long. Flowers white, solitary, nearly sessile in the upper axils. Sepals deciduous, triangular, ¾ line long. Petals broadly obovate, 3 lines long. Capsule slightly convex, usually 10-celled. *Fabricia lævigata*, Gært.

On North-East, North, and North-West Coast, Bass Straits; also South Australia, Victoria, and New South Wales. Fl. Oct.-Dec.

2. L. SCOPARIUM, *Forst.* A rigid, erect shrub, usually 4-6 feet. Leaves rigid, pungent, concave, ovate to rather narrow, 3-5 lines long. Flowers polygamous, nearly sessile in the axils or terminating short lateral branches. Sepals and petals as in *L. lævigatum*, only rather smaller. Capsule very convex, half protruding and free from the tube.

Very common; also South Australia, Victoria, New South Wales, and New Zealand. Fl. Nov.-Jan.

3. L. LANIGERUM, *Sm.* An erect, very variable shrub or small tree. Leaves variable in size and shape, from narrow-oblong 2 lines long and blunt or acute to broadly oblong ¾ inch long and acute or nearly blunt. Flowers white, terminating lateral branches, tube and calyx clothed with silky hairs. Sepals broadly lanceolate, about 1 line long. Petals broadly obovate, 2-3 lines long. Capsule much protruding and convex, mostly 4 lines diameter.

Very common in all situations; also in South Australia, Victoria, New South Wales, and Queensland. Fl. spring and summer.

> Var. *montanum.* Larger than the type in all parts, sometimes 60-70 feet high, with copious papery bark. Flower ¾ inch diameter. Capsule ½ inch. Common in many parts in humid forests and sub-alpine localities.

4. L. FLAVESCENS, *Sm.* Slender, 5-10 feet, often drooping. Leaves narrow or broadly oblong or nearly spathulate, 3-8 lines long, blunt or shortly pointed. Flowers mostly nearly sessile axillary, as in the last but much smaller. Capsule glabrous, red, fleshy till very old, flat, then somewhat convex.

Very common in wet heaths; also Eastern Australia. It also occurs in the Eastern Archipelago. Fl. Nov.-Dec.

> Var. *nitidum.* Similar to the type, only slender, and with a drooping tendency. Capsules somewhat silky hairy. *L. nitidum*, H. Usually referred to *L. lanigerum*, with which it only agrees by being tomentose on the capsules.

5. L. MYRTIFOLIUM, *Sieb.* A small or tall shrub, 2-10 feet. Leaves obovate to linear-spathulate, ½-¾ inch long. Flowers solitary, nearly sessile, axillary. Sepals short and broad. Petals 2-4 lines long. Capsule 2-4 lines diameter, flat-topped, the valves alone protruding.

Recherche, North and West Coast, Bass Straits: also Eastern Australia. Fl. Oct.-Jan.

6. L. RUPESTRE, *H.* A prostrate shrub, creeping over rocks, rarely erect. Leaves oblong, blunt or slightly pointed, 2-3 lines long. Flowers axillary, or terminating short lateral branches. Flowers and capsule as in *L. scoparium.*

Common on mountain-tops. Fl. Jan.

5. KUNZEA.

Ovary wholly immersed in the floral tube which is continued above it, 2-5-celled. Sepals 5, continuous with the tube. Petals 5. Stamens numerous, free, exceeding the petals in length. Fruit capsular, succulent.

Limited to Australia. Intermediate between *Leptospermum* and *Callistemon.*

K. CORIFOLIA, *Reich.* An erect shrub, 6-12 feet. Leaves linear, obtuse, slightly concave, 3-4 lines long. Flowers numerous in terminal and axillary clusters, nearly sessile, about 3 lines long. Sepals very short, broad. Petals white, ½-1 line long, orbicular. Stamens 3-4 lines long.

Schouten to George's Bay, Bass Straits; also in Victoria and New South Wales. Fl. Dec.

6. CALLISTEMON.

Ovary wholly immersed in the floral tube, which is continued above it, 3-4-celled. Sepals 5, continuous with the tube. Petals 5. Stamens numerous, exceeding the petals, free or indefinitely connected. Fruit a many-seeded woody capsule, adnate, persistent on the branches.

Limited to Australia. Distinct from *Melaleuca* in the stamens not being united in five defined bundles.

C. SALIGNUS, *D. C.* An erect shrub or small tree. Leaves lanceolate, blunt or acute, 1½-3 inches long. Flowers numerous in terminal spikes, but the shoot soon continuing above. Sepals short. Petals green, about 2 lines long. Stamens yellow, 6 lines.

Very common on river-banks; also South Australia, Victoria, New South Wales, and Queensland. Fl. Dec.

> Var. *viridiflora.* Leaves ¾-1 inch, rigid, acute, linear. Stamens ¾ inch long. *C. viridiflorus*, D. C.

7. MELALEUCA.

Ovary 3-celled, immersed in the floral tube, which is extended beyond it. Sepals 5, continuous with the tube. Petals 5. Stamens very numerous, much exceeding the petals, united in 5 bundles. Fruit a many-seeded capsule sunk in the tube, and persistently adherent to the bark of the branches. Flowers in dense terminal spikes.

A large Australian genus, only one species (*M. leucadendron*, L., common also to the Indian Archipelago) extending beyond the district.

Leaves opposite.	
Leaves $\frac{1}{4}$-$\frac{1}{2}$ inch, broad, acute	1. *M. squarrosa.*
Leaves 1 line, blunt	2. *M. gibbosa.*
Leaves alternate.	
Leaves ovate to lanceolate	3. *M. squamea.*
Leaves linear, obtuse	4. *M. ericifolia.*
Leaves lanceolate, obtuse	5. *M. pustulata.*

1. M. SQUARROSA, *Sm.* Erect, rather rigid shrub or small tree. Leaves in decussate pairs, broadly ovate or cordate, acute, $\frac{1}{4}$-$\frac{1}{2}$ inch long. Flowers pale yellow, numerous, in an oblong spike.

Common in wet heaths: also in South Australia, Victoria, and New South Wales. Fl. Nov.-Dec.

2. M. GIBBOSA, *Lab.* An erect, rather rigid, wiry shrub. Leaves oblong, blunt, usually longitudinally convex, 1-2 lines long, mostly opposite. Flowers pink-purple, in small dense terminal spikes.

Common in wet places; also in South Australia and Victoria. Fl. Feb.

3. M. SQUAMEA, *Lab.* A tall, rather rigid shrub. Leaves alternate, broadly ovate to narrow lanceolate, acute, 3-6 lines long, mostly concave. Flowers pink-purple or yellow, rather numerous, in spherical terminal spikes.

Common in wet heaths; also South Australia, Victoria, and New South Wales. Fl. Oct.-Feb.

4. M. ERICIFOLIA, *Sm.* An erect, much-branched shrub or small tree, often 30 feet high. Leaves alternate, narrow, linear, blunt. Flowers pale yellow, numerous, dense, in short ovate terminal spikes.

Common in northern and north-eastern districts, Bass Straits; also South Australia, Victoria, New South Wales, and Queensland. Fl. Aug.-Dec.

5. M. PUSTULATA, *H.* A small shrub. Leaves alternate, linear to oblong or cuneate, 2-3 lines. Flowers few, in small terminal spikes.

Near Swansea; also South Australia, Victoria, and New South Wales. Fl. spring and early summer.

8. EUCALYPTUS.

Ovary 3-6-celled, immersed in the floral tube, which is often continued beyond it. Sepals usually absent, when present united in a small outer operculum that is shed before the bud has reached maturity. Petals united in an operculum that falls off at flowering. Stamens numerous, free or nearly so. Fruit a many-seeded capsule.

A very large Australian genus, with three or four representatives extending to South-East Asia. Tasmanian species belong to two sections of the genus.

The primitive type of foliage appears to have been opposite and sessile. This is still common in the seedling, and reverted to in response to irritation. It is also maintained more or less throughout life in a few species. The flowering periods are too irregular to admit servicable record.

RENANTHERÆ. Anther cells diverging from one another, forming a reniform anther. Flowers commonly many in the umbel.

i. Leaf equal-sided or nearly so. Fruit seldom constricted at the orifice. Capsule seldom sunk	ii.
Leaf unequal-sided	vii.

ii.	Principal lateral veins not much smaller than and running almost in the direction of the midrib	iii.
	Lateral veins diverging or obscure	iv.
iii.	Outer stamens normal	1. *E. pauciflora.*
	Outer stamens without anthers	2. *E. sieberiana.*
iv.	Leaves green, narrow, linear	v.
	Leaves glaucous, often broad	vi.
v.	Bark fibrous. Leaves usually 2-6 lines in diameter	3. *E. amygdalina.*
	Bark smooth, white. Leaves under 2 lines diameter	4. *E. linearis.*
vi.	Leaves often opposite. Flowers many. Fruit often constricted	5. *E. risdoni.*
	Leaves alternate. Flowers commonly 3 together. Fruit very broad at orifice	6. *E. coccifera.*
vii.	Fruit 2 lines diameter	7. *E. regnans.*
	Fruit 4 lines diameter	viii.
viii.	Stamens all perfect	8. *E. obliqua.*
	Outer stamens barren	9. *E. hæmastoma.*

PARALLELANTHERÆ. Anther cells parallel, and joined throughout their length. Flowers usually 3 together. Commonly solitary in *E. globulus*, sometimes many in *E. viminalis*, and always so in *E. acervula*.

i.	Flowers normally solitary	ii.
	Flowers three together	iii.
	Flowers many	viii
ii.	Leaves oblique, long	17. *E. globulus.*
	Leaves equal, ½-1 inch	14. *E. vernicosa.*
iii.	Leaves opposite	iv.
	Leaves alternate	v.
iv.	Leaves connate at base	12. *E. gunnii.*
	Leaves sessile	13. *E. cordata.*
	Leaves shortly stalked	14. *E. vernicosa.*
v.	Flower stalks long. Fruit urn-shaped	16. *E. urnigera.*
	Flowers shortly stalked	vi.
	Flowers sessile or nearly so	vii.
vi.	Fruit hemispherical, valves protruding	11. *E. viminalis.*
	Fruit oblong to hemispherical, valves enclosed	12. *E. gunnii.*
vii.	Operculum mytriform. Fruit hemispherical	14. *E. vernicosa.*
	Operculum flat, umbonate. Fruit turbinate	15. *E. muelleri.*
viii.	Leaves broad, equal. Fruit obconic	10. *E. acervula.*
	Leaves falcate or narrow. Fruit hemispheric	11. *E. viminalis.*

1. E. PAUCIFLORA, *Sieb.* A medium-sized tree, spreading and somewhat drooping. Bark smooth and white, except at the extreme base. Leaves alternate, stalked, lanceolate, equal or falcate, 3-6 inches, the main veins parallel to and nearly equal to the midrib. Flowers many in the umbel. Operculum short, hemispheric, obtuse, or shortly pointed. Fruit turbinate, slightly or not at all constricted at the apex, about ⅓ inch diameter. Rim broad. *E. coriacea*, Cunn.

Common, except the extreme south and south-west; also in South Australia, Victoria, and New South Wales.

2. E. SIEBERIANA, *F. v. M.* A tall, erect tree, 70-100 feet, but flowering often when young and only 8-10 feet high. Bark on the stem thick, dark, rough, and persistent. Leaves as in *E. pauciflora*, only the veins less conspicuous, and though longitudinal not parallel to the midrib. Flowers also as in *E. pauciflora*,

only smaller, and the outer stamens without anthers and the fruit smaller, about ¼ inch diameter. *E. virgata*, Sieb. (in error).

Falmouth to Gould's Country; also South Australia, Victoria, and New South Wales.

3. E. AMYGDALINA. *Lab.* A tall tree, with rather thick, finely fibrous bark, but often flowering when only a few feet high. Leaves narrow, linear, 2-3 inches long, 2-6 lines wide, alternate, stalked, equal-sided, thick, the lateral veins few and hidden. Flowers small, many in the umbel. Operculum short, hemispherical. Fruit turbinate, but sometimes slightly constricted at the orifice. Capsule not sunk and rim broad in the ripe typical form, 2-3 lines diameter, unstable in details.

Very common; also South and East Australia.

Var. *radiata.* Leaves broader than the type, with a tendency to become smooth-barked, and the fruit larger and often pear-shaped, with sunk capsules. This includes numerous forms between *E. amygdalina* and *E. risdoni*, var. *elata*.

Var. *hypericifolia.* Leaves rather broad, opposite, and sessile. Fruit rather large, often pear shaped. A very unstable form, approaching forms of *E. risdoni*.

Var. *nitida.* Differing from small-statured individuals only in the leaves being broader and more rigid, running absolutely into the type.

4. E. LINEARIS. *Dehn.* A small to medium sized tree, bark smooth and white, or sometimes scaly on the lower portion of the stem. Leaves similar to the last, only still narrower, and the fruits smaller, slightly constricted, and the capsules usually slightly sunk.

Very common, and though presenting a different appearance, hardly morphologically distinct from *E. amygdalina*, Lab.

5. E. RISDONI. *H.* A small to medium sized tree, glaucous, and often drooping. Bark smooth and white. Leaves opposite, often connate, broadly ovate, acute, 1-2 inches long. Flowers as in *E. amygdalina*. Fruit turbinate. Rim broad. Valves protruding, about 4 lines diameter.

Common on dry hills; Bellerive, Risdon, Muddy Plains, valley of South Esk, &c.

Var. *elata.* Often tall. Glaucous, drooping. Bark smooth, ashy-white. Leaves in the characteristic form alternate, stalked, broadly lanceolate, 3-6 inches long. Flowers and fruit as in the type, only usually larger; and in many cases the fruit is pear-shaped, with a depressed capsule. This form is very unstable, and connects with the type and forms of *E. amygdalina*.

6. E. COCCIFERA. *H.* A small erect tree, 8-12 feet, glaucous. Bark white, smooth. Leaves broadly lanceolate, with a slender-hooked apex, 2-3 inches. Flowers commonly 3 in the umbel, sometimes more, or only 1. Bud clavate, rough. Operculum short, hemispheric, rough. Fruit ½ inch diameter, turbinate. Rim broad. Valves very small, protruding.

Common on mountain-tops.

On Ironstone Range the buds are shorter in proportion to length, the operculum, though flat, less rough, and the fruit about 4 lines diameter, thus approximating forms of *E. amygdalina*.

7. E. REGNANS. *F. v. M.* A very tall tree. Bark fibrous, thin, pale, persistent or often deciduous. Leaves alternate, stalked, oblique, falcate, lanceolate, 2-3 inches. Flowers small and numerous, in dense umbels. Operculum small,

hemispheric, but often nearly conical. Fruit nearly pear-shaped, about ⅓ inch diameter. Rim narrow. Capsule sunk.

Common, chiefly in mountainous country; also in Victoria and New South Wales. The species, though closely allied to *E. amygdalina*, passes, on the other hand, insensibly into forms of *E. obliqua*.

8. E. OBLIQUA, *L'Hér.* Tree often attaining very large size. Bark thick, fibrous, and persistent on the stem and main branches in the typical form, but in many localities, especially at an altitude, becoming more and more deciduous, sometimes persistent only at the base. Leaves alternate, stalked, broadly ovate to lanceolate, acute, conspicuously unequal. Veins few, somewhat diverging. Flowers many in the umbel. Operculum small, hemispheric, obtuse, or in trees with very deciduous bark, nearly conical. Fruit pear-shaped, ⅓ inch diameter. Capsule much sunk. Rim narrow, except in deciduous-barked trees, where it becomes broader and red-brown.

Very common; also in South Australia, Victoria, and New South Wales.

9. E. HÆMASTOMA, *Sm.* Tall, erect tree. Bark coarsely fibrous at the base, smooth and mostly white above. Leaves broadly lanceolate, slightly to very oblique, 3-5 inches long, veins few, not very broadly diverging, very similar to *E. obliqua*. Flowers rather numerous, in axillary umbels. Peduncle flat. Pedicels rather long and flat in flower. Flowers as in *E. obliqua*, only all the outer stamens without anthers. Fruit also similar, only the capsule not much sunk, and the rim rather broad and red.

Common in North-Eastern Tasmania; also Eastern Australia.

10. E. ACERVULA, *H.* (not of *Sieber*). Usually a small tree, but sometimes exceeding 100 feet. Bark scaly below, smooth above. Leaves broadly ovate to lanceolate, equal, dark green, and shining, usually undulate on the margin, 2-4 inches long, alternate, stalked. Flowers many in the umbel. Operculum half as long as the floral tube, or rather longer, conical or strongly umbonate. Fruit obconic, very broad at the orifice. Rim broad. Capsule protruding. ⅓ to nearly ¼ inch diameter. *E. gunnii*, F. v. M. (not of Hooker), confused with *E. stuartiana*, F. v. M., by Bentham, *E. macarthuri*, Deane and Maiden, included. Many Australian botanists still maintain this plant as not distinct from *E. gunnii*, H.

Common, except on West Coast; also Victoria and New South Wales.

11. E. VIMINALIS, *Lab.* A medium-sized or large, spreading, sometimes drooping, tree, variable. Bark usually smooth and white from the base, but sometimes the trunk coarsely scaly or scaly-fibrous even to the upper branches. Leaves very variable in size, alternate, stalked, lanceolate, 3-9 inches; varying from 2 inches long and 2 lines wide, to 6-9 inches and broadly lanceolate, falcate, with a red midrib. Flowers commonly 3, rarely more, in the umbel. Operculum as long as the floral tube, mytriform to umbonate. Fruit hemispheric, 3-4 lines diameter. Valves much protruding.

Very common; also throughout South and East Australia.

> Var. *macrocarpa*. Somewhat more erect than the type, but bark and leaves similar. Flowers 3 in umbel. Operculum smooth, hemispheric, with a well-developed umbo, nearly as long as the floral tube. Fruit turbinate, smooth, but with 2 or 3 obscure ribs. Capsule protruding, about 5 lines in diameter. Considered by von Mueller to be a form of *E. globulus*, Lab.; by J. H. Maiden to be a form of *E. maideni*, F. v. M. I have raised many seedlings from Tasmanian trees. Nearly all diverge from the parent in the direction of *E. globulus* or *E. viminalis*, leading me to suspect hybridisation.

12. E. GUNNII, *H.* A small, erect, glaucous tree, 10-20 feet, rarely much taller. Bark smooth, white. Leaves alternate, stalked, rather thick, veins spreading, oblong to broadly lanceolate, equal-sided, often obtuse, 1-3 inches long. Flowers

3 in the umbel, shortly stalked. Operculum shortly hemispheric to nearly conical. Fruit hemispheric to nearly oblong-truncate, 2-3 lines diameter. Rim rather thin. Capsule sunk.

Common in west-central districts; also South and East Australia.

> Occasionally in luxuriant clumps the young trees will maintain opposite connate leaves until after the flowering age, but, at least in all recorded instances, when attaining a height of 15 feet the mature foliage is assumed. This form appears very close to, if distinct from, *E. cinerea*, F. v. M. Von Mueller once suggested for this form the name *E. perriniana.*

13. E. CORDATA, *Lab.* A small, erect tree, seldom exceeding 20 feet. Bark smooth. Leaves broadly ovate-cordate, opposite, sessile. Flowers 3 in the umbel. Operculum nearly flat, umbonate. Fruit hemispheric, sometimes constricted at the orifice, ⅓ inch diameter. Rim narrow. Capsule much sunk.

Huon Road, Recherche, Brown Mt., Campania, Tasman Peninsula, &c.; also southern districts of New South Wales.

14. E. VERNICOSA, *H.* Erect shrub, 4-6 feet, rarely 12-20. Bark smooth. Leaves thick, shining, equal-sided, broadly oblong, stalked, opposite, rarely alternate, ½-2 inches long. Flowers solitary or 3 in the umbel. Operculum conical, half as long as the capsule. Fruit hemispheric to semi-ovate, ¼-⅓ inch diameter, on very short stalk. Capsule sunk.

On mountain-tops, from La Perouse to Arrowsmith and to the West Coast.

15. E. MUELLERI. *T. B. Moore.* A very tall, erect tree, though sometimes flowering when still small. Bark smooth, blotched with red-brown. Leaves oblong-ovate to lanceolate-falcate, thick, shining, stalked, alternate, 1-3 inches long. Flowers 3 in the umbel, nearly sessile in the axils. Operculum nearly flat, umbonate, rough. Fruit turbinate, ⅓-½ inch. Capsule sunk. Valves often protruding.

Common on mountains in South-West Tasmania at about 2000 feet altitude. Very probably a lowland form of *E. vernicosa*, H.

16. E. URNIGERA, *H.* Erect, small to rather tall tree. Bark smooth, blotched with red-brown. Leaves alternate, stalked, shining, equal-sided, narrow-ovate to lanceolate, 2-4 inches long. Flowers 3 in the umbel, on a rather long peduncle, and also long pedicels. Operculum small, umbonate to flat. Fruit ½-¾ inch long, urn-shaped, constricted below the end. Rim broad. Capsule very much sunk.

Common on mountains, especially in the south.

> Var. ***elongata.*** A tall, spreading tree. Bark smooth, white. Leaves linear-lanceolate, 4-8 inches long. Peduncle not very long. Operculum conical, umbonate, half as long as the capsule. Fruit pyriform-globose, slightly constricted, ⅓ inch long. Capsule much sunk.

17. E. GLOBULUS, *Lab.* Tall, erect tree. Bark smooth, peeling off in long ribands. Leaves broadly lanceolate, falcate, alternate, stalked, 4-12 inches long. Flowers solitary or 3, in an umbel, nearly sessile. Operculum flat, hemispheric, with a broad umbo much warted. Capsule broadly obconic, ribbed and warted, ¾-1 inch diameter. Rim broad. Valves level with the rim. Outer operculum present; shed early.

Common, except in the west; also Victoria and New South Wales.

ORDER XXXII.—*LYTHRACEÆ.*

Pistil of 2-5 blended carpels, the ovarian cavities distinct, or in some genera the cavity common to all the carpels, and the placentas parietal. Floral tube well developed and tubular round the pistil, but free from it. Sepals and petals 4-6. Stamens usually as many, or twice as many, as the petals. Fruit many-seeded, capsular.

A world-wide order.

LYTHRUM.

Sepals 4-6, with 4-6 sepaloid extensions of the floral tube intervening. Petals 4-6.

As widely distributed as the order.

Leaves opposite, lanceolate	1. *L. salicaria.*
Leaves alternate, linear	2. *L. hyssopifolium.*

1. L. SALICARIA, *Linn.* Erect herb, 2-3 feet. Leaves opposite, lanceolate, stem-clasping, 1-1½ inch long. Flowers pink-purple, in a terminal leafy spike, 4-6 inches long. Stamens usually 12 (6 short and 6 long).

Jordan River and numerous other damp localities; also South Australia, Victoria, New South Wales, and Queensland. Found in most of the temperate and sub-tropical parts of the world. Fl. Jan.-Feb.

2. L. HYSSOPIFOLIUM, *Linn.* A small, ascending herb, 6-8 inches. Leaves mostly alternate, linear, ¼-½ inch. Flowers very small, pink-purple, solitary, and nearly sessile in the upper axils. Petals 4-6. Stamens same number.

North Hobart Recreation Ground, and many parts in the north in damp places; also similar in Australian and general distribution to the last. Fl. Dec.

ORDER XXXIII. *ONAGRACEÆ.*

Pistil of usually 4 blended carpels. Ovarian cavities distinct or common, immersed in and connate with the floral tube, which is sometimes extended beyond it. Sepals usually 4. Petals same number. Stamens same or twice as many. Fruit various.

Of world-wide distribution.

Tube extending beyond the ovary. Seeds hairless	1. *Œnothera.*
Tube not prolonged. Seeds with a tuft of long hairs	2. *Epilobium.*

1. ŒNOTHERA.

Floral tube extending beyond the ovary. Sepals 4. Petals 4. Stamens 8. Fruit an elongated capsule, the valves opening and curving outwards from above downwards. Seeds many, without hairs.

The genus is chiefly American, and is represented in Australian distribution by the Tasmanian plant only.

Œ. TASMANICA, *H.* A small, creeping or ascending herb, 1-3 inches long. Leaves opposite or alternate, narrow, oblong, obscurely toothed, 2-6 lines long. Flowers small, yellow, sessile, and solitary in the upper axils. Petals 1-1½ line long. Capsule elongating to ½-¾ inch.

Marshes at a high altitude in the western mountains. Fl. Dec.

2. EPILOBIUM.

Tube not prolonged beyond the ovary, and the seeds with a tuft of long hairs at one end. Otherwise as in *Œnothera.*

World-wide distribution.

Leaves narrow, mostly alternate . ..	1. *E. junceum.*
Leaves mostly opposite.	
Leaves stem-clasping	2. *E. glabellum.*
Leaf-bases narrow.	
Petals about 2 lines	3. *E. alpinum.*
Petals 3-6 lines	4. *E. billardierianum.*

1. E. JUNCEUM. *Forst.* Sub-erect herb, 6-12 inches, pale from minute pubescence. Leaves mostly alternate, sessile, linear, or nearly so, remotely toothed, ½-1 inch. Flowers small, pink. Capsule linear, 1-2 inches.

Very common. Throughout extra-tropical Australia and New Zealand. Fl. Dec.-Feb.

2. E. GLABELLUM, *Forst.* Erect herb, 1-2 feet. Leaves mostly opposite, sessile, usually with broad, stem-clasping bases, marginal teeth sometimes obtuse and remote, at others acute, small, and numerous, oblong to nearly linear, ¾-1½ inch. Flowers small, pale, in the upper axils. Capsules much elongating.

Very common; also Southern Australia and New Zealand. Fl. Nov.-Mar.

3. E. ALPINUM, *Linn.* Small herb, decumbent at the base, then erect, glabrous, or with two hairy lines descending from the leaves. Leaves opposite, stalked, or nearly sessile, oblong, remotely and obscurely toothed, ¼-¾ inch. Flowers purple-pink to white, in the upper axils, small. Capsule much elongating. *E. confertifolium*, H., included; *E. tenuipes*, H.

Common on mountains; also in Victoria and New Zealand; in colder parts of the Northern Hemisphere. Fl. Jan.

> The common Tasmanian form is exactly *E. alpinum*, Linn., rom which it diverges.

4. E. BILLARDIERIANUM, *Ser.* n erect herb, 6 inches to 1½ foot. Leaves opposite, oblong to nearly linear, obtusely and remotely toothed. Flowers in the type large. Sepals ½ inch. Petals ¾ inch, pink to white. Capsule much elongating. *E. pallidiflorum*, H., included.

Common in many parts, especially in alpine situations; also in South Australia, Victoria, and New South Wales. Fl. Jan.

> Though so distinct in its large form, it runs on many mountains in an unbroken series into *E. alpinum*, Linn.

ORDER XXXIV.—*CUCURBITACEÆ.*

Pistil of few, usually 3, blended carpels. Ovarian cavity common, placentas parietal, immersed in and connate with the floral tube. Calyx of 5 partially united sepals. Petals 5, united or free. Stamens 3-5. Anthers large, waved, and often connate. Flowers usually unisexual. Fruit fleshy or leathery.

A large order, in most warm climates.

SICYOS.

Fruit small, dry, prickly, containing but one pendulous ovule. Stamens united in a central column.

S. ANGULATA, *Linn.* Herbaceous, creeping, slender, 2-5 feet long, developing climbing tendrils. Leaves alternate, stalked, cordate or palmately 3 or 5-lobed, the ends acute, 1-2 inches long. Flowers small, seldom exceeding 2 lines, few together in axillary stalked umbels or racemes. Fruit nearly ½ inch long.

Islands of Bass Straits; also in Victoria, New South Wales, and Queensland, New Zealand, Islands of the Pacific; and throughout America and Southern Africa. Fl. Nov.-Dec.

ORDER XXXV.—*FICOIDEÆ.*

Pistil of few carpels. The ovarian cavities distinct, wholly inferior. Sepals 3-5. Petals numerous or none. Fruit capsular.

The order is found in all but the colder parts of the world.

Leaves cylindric. Petals numerous ... ... 1. *Mesembryanthemum.*
Leaves broad, flat. Petals none ... ... 2. *Tetragona.*

1. MESEMBRYANTHEMUM.

Petals very numerous, linear. Stamens numerous. Pistil 5-celled.

Leaves angled ... ... 1. *M. æquilaterale.*
Leaves terete ... ... 2. *M. australe.*

1. M. ÆQUILATERALE, *Haw.* A procumbent, much-spreading perennial. Leaves thick and fleshy, three-sided, opposite, and joined across the stem, 2-3 inches long. Ovary ½ inch long. Sepals unequal. Petals spreading to about 1½ inch diameter, pink, purple. Capsule coriaceous, ½ inch diameter, slightly convex above.

Abundant on coasts. Common almost throughout Australia, and extends to both North and South America. Fl. spring and summer.

2. M. AUSTRALE, *Sol.* A prostrate, creeping perennial, rooting at the nobes. The leaves confined to the very short lateral branchlets, opposite, somewhat flattened, but more often club-shaped, usually ¾ inch long. Flowers red, usually on stalks rather longer than the leaves, about 1 inch diameter, not differing in essential details from those of *M. æquilaterale.*

North and West Coast, Pittwater, and Muddy Plains. Probably on most salt marshes with the last species. Throughout extra-tropical Australia. A common New Zealand and South African plant. Fl. spring and summer.

2. TETRAGONA.

Calyx 3, 4, or 5 lobed. Petals none. Stamens sometimes very numerous, but usually 12 or 16 in Tasmanian species. Ovary 2-8-celled, with 1 pendulous ovule in each cell. Styles as many as the cells, linear, free. Fruit a hardened capsule.

A common coast genus in the Southern Hemisphere.

Leaves mostly exceeding 2 inches. Stamens in clusters 1. *T. expansa.*
Leaves mostly under 2 inches. Stamens scattered . 2. *T. implexicoma.*

1. P. EXPANSA, *D. C.* A prostrate, much-spreading perennial. Leaves ovate or triangular, stalked, 2-4 inches long. Flowers small, solitary or two together, shortly stalked or sessile. Calyx-lobes usually 4, about 2 lines long, yellow inside, spreading. Stamens in bundles of 3 or 4. Ovary half buried, 3-8-celled. Fruit ¼-½ inch diameter, globular and smooth, to more or less angular, and with 2-3 horn-like protuberances.

North Coast. Throughout Eastern and Southern Australia: New Zealand to Asia and America. Fl. spring and summer.

2. P. IMPLEXICOMA, *Hook.* A prostrate, much-spreading perennial. Leaves mostly crowded on small lateral branches, usually rhomboid, stalked, thick, crystalline below, mostly about 1 inch long. Flowers small, solitary or 2 together in the upper axils, on slender stalks, often 1 inch long, polygamous. Sepals about 2 lines long, broad, obtuse, yellowish. Stamens about 16, dispersed. Fruit ribbed or tubercled, ¼ inch long.

Very common on coasts. Throughout Australia and New Zealand. Fl. spring and summer.

ORDER XXXVI.—*UMBELLIFERÆ.*

Pistil of 2 carpels attached by their inner sides to a columnar prolongation of the torus, each bearing one pendulous ovule. Perianth superior. Sepals 5, sometimes abortive. Petals 5, rarely absent, equal, or sometimes unequal. Stamens 5, rarely fewer. Fruit not much altered from the flowering state of the pistil, each carpel with its seed falling away from the column. Flowers usually arranged in umbels, rarely solitary.

In *Actinotus* one carpel is abortive; the mature pistil becomes unilocular and 1-seeded.

i.	Leaves entire or not deeply lobed	ii.
	Leaves deeply lobed or divided	iv.
ii.	Leaves broad. Flowers in dense umbels	iii.
	Leaves filiform, cylindric	10. *Crantzia.*
iii.	Carpels flattened in the same plane	1. *Hydrocotyle.*
	Carpels flattened parallel to one another	5. *Diplaspis.*
	Carpels single. Petals absent	6. *Actinotus.*
iv.	Umbels simple	v.
	Umbels compound	vi.
	Umbels few-flowered, irregular	vii.
v.	Plant very spiney	7. *Eryngium.*
	Carpel solitary. Petals absent	6. *Actinotus.*
	Leaves very small, palmate	1. *Hydrocotyle.*
	Leaves large, palmate	2. *Trachymene.*
	Leaves pinnate, dissected	9. *Oreomyrrhis.*
vi.	Bracts linear	11 *Aciphylla.*
	Bracts absent	8. *Apium.*
vii.	Umbels axillary	3. *Xanthosia.*
	Umbels terminal. Fruit smooth	4. *Azorella.*
	Umbels terminal. Fruit clothed with hooked hairs	12. *Daucus.*

1. HYDROCOTYLE.

Fruit laterally compressed, dorsal rib prominent, lateral ones faint, about as broad as long. Calyx obsolete. Umbels simple, rather dense, axillary, stalked. Distribution world-wide.

Leaves broadly lobed or entire.	
Leaves reniform, lobed.	
Fruit winged	2. *H. pterocarpa.*
Fruit not winged	1. *H. hirta.*
Leaves cordate, glabrous	6. *H. asiatica.*
Leaves deeply lobed or divided.	
Each carpel with a pit on each side	4. *H. callicarpa.*
Carpels pitted and rough. Leaves 3-lobed, obtuse	5. *H. capillaris.*
Fruit unpitted. Leaves of 3-5 cuneate segments	3. *H. tripartita.*

1. H. HIRTA. *R. Br.* Small, prostrate, and creeping, hairy. Leaves stalked, reniform, with many broad shallow lobes, ⅓-1 inch broad. Umbel stalked, dense, many-flowered, axillary. Fruit about 1 line diameter, smooth. *H. peduncularis*, R. Br., *H. tasmanica*, H., and *H. vagans*, H., included.

Very common; also throughout extra-tropical Australia. Fl. summer.

2. H. PTEROCARPA, *F. v. M.* Small, prostrate, spreading. Leaves on long slender stalks, somewhat orbicular, crenate or with shallow clefts, ½-1 inch diameter. Flower-stalks shorter than the leaves, very slender; flowers larger, usually fewer and less crowded than in *H. hirta.* Fruit very flat, the edge expanding into a broad wing.

Circular Head, George's Bay, Southport, Reminé; also in Victoria and South Australia. Fl. Feb.

3. H. TRIPARTITA, *R. Br.* Small, slender, and prostrate, matted or spreading. Leaves of 3-5 entire or toothed segments, usually under 3 lines diameter. Flower-stalk slender, bearing a small loose head of 3-6 small, nearly sessile, flowers. Fruit ¾ line diameter, smooth or granular. *H. muscosa*, Hook.

Common in moist places. Throughout Eastern Australia. Fl. spring and summer.

4. H. CALLICARPA, *Bunge*. Small, slender, usually prostrate and spreading. Leaves mostly ¼ inch diameter, of 3 or 5 cuneate toothed segments. Flowers in small umbels, usually 6-10, very minute, each on a short stalk that lengthens considerably under the fruit. Fruit ½-¾ line broad, smooth, the intermediate rib prominent, curved, with a conspicuous pit in front of it. *H. tripartita*, Hook.

Near Launceston, George's Bay, near Hobart in many parts, Longley. Probably common in dry soil, but overlooked. It occurs throughout Southern Australia. Fl. Nov.-Jan.

5. H. CAPILLARIS, *F. v. M.* A minute, slender annual. Leaves deeply 3-lobed. Flowers shortly stalked, few together in a small head on a common stalk. Fruit about ¼ line broad, the intermediate ribs very prominent, the space between them and the dorsal rib filled with a swollen, pitted development.

Pleasant Boat Harbour, George's Bay; also in Victoria, South Australia, and West Australia. Fl. Nov.-Jan.

6. H. ASIATICA, *D. C.* Small, prostrate, and creeping. Leaves mostly cordate, obscurely toothed, ¾-inch long, smooth, on rather long stalks. Flowers 3-4 together, purple. Bracts well-developed. Fruit about 2 lines diameter.

Very common in swamps. Throughout Australia, New Zealand, and most warm parts of the globe. Fl. Nov.-Mar.

2. TRACHYMENE.

Fruit laterally compressed, dorsal rib prominent, lateral ones faint, about as broad as long. Calyx obsolete. Umbels terminal.

Principally Australian, extending to New Caledonia and Borneo. Differing from *Hydrocotyle* in habit and in not possessing stipules.

Lower leaves divided into segments ... ... 1. *T. australis*.
Lower leaves lobed .. .. 2. *T. humilis*.

1. T. AUSTRALIS, *B.* An erect herb, 1-2 feet. Leaves at the base deeply divided into 3-5 much-divided, toothed segments. Umbels many, lateral or terminal, many-flowered. Flowers small, white. Fruit flat, about 1 line, often unequal. *Didiscus pilosus*, H.

Huon, and in many parts in the north and east. Extra-tropical Australia. Fl. Nov.-Feb.

2. T. HUMILIS, *B.* Erect, 3-6 inches. Leaves radical, long-stalked, ovate or oblong, entire or 3-5-lobed, ½-1 inch long. Stem about 4-6 inches, bearing a single terminal umbel. Fruit flat, smooth, 1½-2 lines diameter. *Didiscus humilis*, H.

Sub-alpine, Ben Lomond and northern hills. It occurs also in Victoria and New South Wales. Fl. Dec.-Jan.

3. XANTHOSIA.

Fruit laterally compressed, dorsal rib obtuse, lateral ones fairly prominent, somewhat longer than broad. Sepals fairly developed. Umbels few, flowered, lateral or axillary. Bracts conspicuous.

Limited to Australia.

Shrubby. Leaves with obtuse lobes ... ... 1. *X. pilosa*.
Slender, decumbent.
  Leaf-segments few, broad ... ... 2. *X. pusilla*.
  Leaf-segments numerous, narrow .. .. 3. *X. dissecta*.

1. X. PILOSA, *Rudge*. Erect or depressed, branched under-shrub, 6 inches to 2 feet. Leaves variable, usually divided into few obtuse lobes, hairy and white beneath, about 1 inch long. Flowers 1-3, in small, nearly sessile, lateral umbels. Bracts large and white. Petals narrow, small, white. *X. montana*, H.

Common on the North Coast, Goshen, George's Bay, Port Arthur, Longley, Mainland near Schouten I., &c., Islands of Bass Straits; also throughout Eastern Australia. Fl. Nov.-Feb.

2. X. PUSILLA, *Bunge*. A small erect or diffuse plant, of 2-4 inches, slightly covered with spreading white hairs. Leaves of 3 entire oblong-lanceolate segments, the lateral segments sometimes 2-lobed. Flowers 1-3 together, in small, usually sessile, umbels opposite the leaves, with usually 5 narrow lanceolate bracts surrounding the flowers. Calyx-lobes broadly lanceolate, acute, nearly as long as the ovary. Petals small and narrow. Fruit about 1⅓ line diameter, smooth, ribs plain, but not prominent.

North Coast, Reminé. Throughout Southern Australia. Fl. Jan.

3. X. DISSECTA, *Hook.* Prostrate, spreading, and much-branched, forming tufts of 6 inches to 1 foot in diameter, glabrous or nearly so. Leaves on long stalks, divided into 3 segments, the segments again divided or toothed. Flowers usually 2 or 3 together, in small umbels irregularly arising from a common stalk that is inserted opposite a leaf, each head of flowers surrounded by a few narrow linear bracts. Calyx-lobes broadly lanceolate, acute. Petals small and narrow. Fruit about 1 line diameter, with four very distinct ribs on each side.

North Coast, Mount Bischoff, Mount Dundas, Longley, &c. Throughout South-Eastern Australia. Fl. Dec.

4. AZORELLA.

Calyx-lobes prominent, sometimes petal-like, and deciduous. Petals obtuse or acute. Fruit slightly compressed laterally, each carpel 5-ribbed, the lateral ribs free from the commissure.

A genus spreading from Australia to South America, New Zealand, and South Pacific.

Stems slender, bearing 1, 2, or 3 flowers, on long stalks ... ... 1. *A. saxifraga.*
Stems bearing an irregular umbel of 6-12 flowers ... 2. *A. dichopetala.*

1. A. SAXIFRAGA, *Benth.* Small, tufted, and hairless. Leaves all radical, stalked, spreading; the laminæ cordate, deeply 5-9-lobed, ½ inch long or less. Flower-stalk erect, often 4 inches long, usually bearing 3 flowers on long stalks at the end, or 2 at the end and 1 lower down, each with a narrow bract at its base. Calyx-lobes triangular, acute, minute. Petals 1 line long, broad, white. Fruit about 2 lines long and 1 broad, scarcely compressed. *Microsciadium saxifraga*, H.

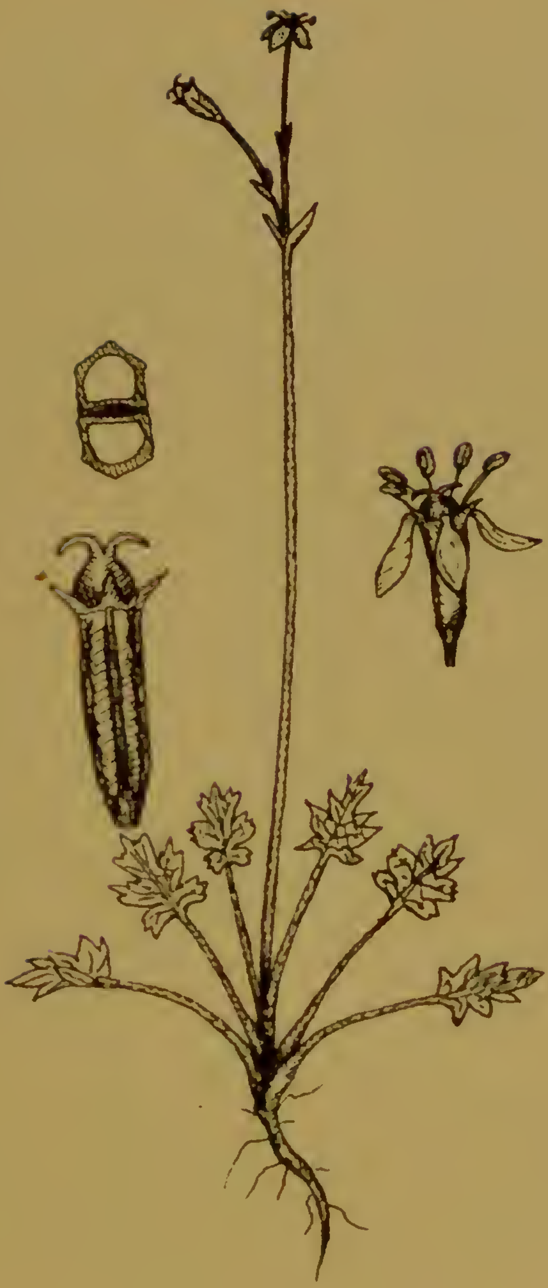
Loddon Plains, Macquarie Harbour, Reminé. In wet heaths. Fl. Dec.-Jan.

2. A. DICHOPETALA, *Benth.* A densely-tufted, somewhat hispid perennial. Leaves all radical, on long stalks, the laminæ orbicular to reniform, with 5 or 7 short, broad, crenate lobes. Flower-stalk erect, bearing an irregular umbel of 6-12 flowers, and often a small supplementary umbel arising in the place of one of the flowers; the inflorescence surrounded by an involucre of unequal bracts that are often united at the base. Calyx-lobes petal-like, as large as the petals, and falling off with them. Petals 1 line long, acute. *Dichopetalum ranunculaceum*, Hook.

Great Lake, Mount Sorell, Mount La Perouse, Eldon Range. It occurs also in Victoria. Fl. Dec.-Jan.

5. DIPLASPIS.

Calyx-teeth inconspicuous. Petals ovate. Fruit compressed, so that the broad axes of the carpels are parallel. Carpels accordingly much flattened from the front to the back, the outer face flat with the dorsal rib in the centre, the



AZORELLA SAXIFRAGA. *B.*

[illegible]

lateral ribs bordering the broad commissure in the centre of the convex inner face, the intermediate ribs forming the edges of the carpels.

The genus consists of the following that are confined to Australian distribution. Referred by Mueller to *Huanaca.*

Leaves quite entire, glabrous	1. *D. hydrocotylea.*
Leaves crenate on margin, hairy	2. *D. cordifolia.*

1. D. HYDROCOTYLEA, *Hook.* A glabrous perennial, with a creeping rhizome. Leaves in tufts, on long stalks, orbicular to ovate, thick, with revolute margin, mostly ¼-½ inch diameter. Flower-stem ½-1 inch long, bearing a single terminal umbel of 12-20 shortly-stalked flowers, surrounded by an involucre of few unequal, linear bracts.

Marshes and wet sandy ground, about alpine lakes; also in Victoria. Fl. Dec.-Jan.

2. D. CORDIFOLIA, *Hook.* Very near *D. hydrocotylea*, but rather larger, more or less hirsute, with spreading hairs, the revolute margins of the leaves distinctly crenate; the flowers more numerous, and fruits narrower on a longer stalk.

Marshy places at Mount Sorell, Mount La Perouse, Macquarie Harbour, &c. Fl. Dec.-Jan.

6. ACTINOTUS.

Calyx-limb distinct, and usually 5-lobed, in one Tasmanian form absent. Petals when present 5. Ovary with a single cell and ovule. Styles 2. Fruit obliquely ovate.

A genus of very few species, confined to Australia and New Zealand. Peculiar for the obliteration of the ovarian portion of one carpel.

Leaves exceeding ¼ inch. Calyx 5-lobed	1. *A. bellidioides.*
Leaves under ¼ inch. Calyx-lobes absent	2. *A. suffocata.*
Leaves divided or deeply lobed	3. *A. moorei.*

1. A. BELLIDIOIDES. *Benth.* A small, densely-tufted perennial. Leaves radical, from broadly to narrowly ovate, usually coarsely crenate on the margin, about 4-6 lines long, on a stalk of about the same length, more or less covered with soft hairs. Flowering stem about 1 inch high, bearing a small dense umbel. Involucre of about 6-10 narrow ovate bracts, united towards their base. Flowers usually 6-10. Calyx-lobes 5, conspicuous, like the rest of the calyx somewhat hirsute. Petals none. Fruit about 1 line long. *Hemiphues bellidioides*, Hook.

Lake St. Clair, Lake Fenton, Mount Fatigue, Mount Dundas, &c. Fl. Dec.-Jan.

> Among the varieties, Hooker describes one form, var. *fulva*, bearing small linear petals; but there is some doubt of the correctness of the observation.

2. A. SUFFOCATA, *Rod.* A smaller plant than the preceding, and of similar habit. Leaves ovate, entire, smooth, about 1 line long, on a hairy stalk rather longer. Flower-stalk about ½-¾ inch. Umbel about one-third as large, but otherwise similar to the last. Flowers without any calyx-limb, and only 2 stamens. Fruit about ½ line long. *A. bellidioides*, var. *suffocata*, Hook.; *A. novæ-zelandiæ*, Petrie.

On mountains, South-West and West Coasts; also in New Zealand. Fl. Dec.-Jan.

3. A. MOOREI, *Rod.* A small tufted and creeping perennial, usually with procumbent leafless branches extending to 2-6 inches, the leafy ends ascending. Leaves alternate, 3-segmented, the lateral segments usually 2-cleft, about 2 lines long, segments lanceolate-ovate; stalk slender, about 4 lines long, with a short

broad sheathing-base clothed with white silky hairs. Peduncle terminal, rather short to 1½ inch, slender, hairy. Umbel about 2 lines diameter, bracts about 6, nearly free. Flowers about 5 or 6. Calyx of 4 sepals, and shortly united in a tube above the ovary. Petals none. Stamens apparently always 2. Fruit black, shining.

Swamp halfway up Mount Hartz, Mount Hamilton, Mount Reid, Mount Tyndal. Fl. Nov.-Jan.

7. ERYNGIUM.

Calyx-lobes developed into spines. Petals entire. Fruit ovoid, scarcely compressed, the ribs obscure.

A common genus in both hemispheres.

E. VESICULOSUM, *Lab.* Prostrate and spreading. Leaves tufted on the stems, oblong to almost linear, coarsely prickly, mostly 2-3 inches long. Flowers in small, dense, compound umbels at the nodes of the creeping stems; bracts much exceeding the flower-heads, linear, rigid, and prickly.

Very common in marshy situations; also throughout South-Eastern Australia. Fl. Nov.-Feb.

8. APIUM.

Calyx-lobes inconspicuous. Petals ovate. Fruit short, slightly compressed laterally, ribs prominent, bracts absent.

A genus of few species, but of excessively wide distribution. The only Tasmanian representative is common to southern extra-tropical parts.

A. AUSTRALE, *Hook.* Usually prostrate and spreading, rarely almost erect. Leaves divided, but to a variable extent, usually into many acutely-lobed segments. Flowers white, many, in small stalked umbels, 3-6 of these arising from a common stalk forming a compound umbel that remains very shortly stalked in the leaf-tufts. There are no bracts to either the primary or secondary umbels. Fruit with very distinct ribs. *A. prostratum*, Lab.

Very common on coasts and in wet places. Throughout Australia, and a common plant throughout extra-tropical Southern Hemisphere. Fl. Nov.-Jan.

9. OREOMYRRHIS.

Calyx-lobes inconspicuous. Petals with inflexed tips. Fruit oblong or narrow, usually tapering towards the end, slightly compressed laterally.

A small genus. The following, which is the only one in Australian distribution, is common to South America.

O. ANDICOLA, *Endl.* A tufted perennial, variable in habit and extent of development. Stems erect, from simple leafless to branched and slightly leafy, and from a few inches to 1 foot or more. Leaves singly to many times divided. Lobes small, linear to oblong. Stems bearing a simple or compound umbel surrounded by 6-10 ovate bracts. Flowers numerous, at first nearly sessile, but the stalks lengthening under the fruit. Fruit narrow-oblong, tapering above, 1½-3 lines long.

Common in very numerous situations; found also in New South Wales and Victoria. Fl. Dec.-Jan.

> Very variable and numerous doubtful species have been formed of the varieties.

10. CRANTZIA.

Calyx-lobes shortly prominent. Petals acute, concave. Fruit broadly ovoid, very slightly laterally compressed, the carpels almost cylindrical, ribs distinct.

The genus contains but one species that has a wide distribution in the Southern Hemisphere.

C. LINEATA, *Nutt.* A small plant, with a slender, creeping rhizome, developing nodes of growth at intervals. Leaves solitary, or few at each node, linear-cylindrical, hollow, but divided by numerous septa from 1 to 6 or 7 inches long. Flowers small, usually few, in a simple umbel at each node, each flower on a slender stalk of 1 to about 4 lines long, and the umbel on a tolerably long, slender peduncle. Fruit about 1 line long.

Probably common in ditches and on the borders of swamps, but overlooked. Zeehan, Bellerive, Jordan River, near Launceston, Riverton; throughout the greater part of Australia. Fl. Jan.-Mar.

11. ACIPHYLLA.

Calyx-teeth prominent. Petals ovate or lanceolate, not inflected at the tip. Fruit in typical species oblong and dorsally compressed, the ribs prominent, often developed into narrow wings.

A genus of few species, confined to Australia, New Zealand, and adjoining distribution.

A. PROCUMBENS, *F. v. M.* A small, densely-tufted plant, with prostrate branches, the sheaths of the dead leaves persistent. Leaves twice divided, the ultimate segments short, crowded, linear, acute, and tipped with hair-like points. Flowers in a single compound umbel, on a very short stem. Bracts few, linear. Fruit ovoid, about 1½ line long, the ribs very prominent. *Gingidium procumbens*, Hook.

Summit of Mount La Perouse, Adamson Peak, and Mount Hartz. Fl. Dec.-Jan.

12. DAUCUS.

Calyx-lobes prominent. Petals with inflexed tips. Fruit ovoid or oblong scarcely compressed, bristly. Each carpel somewhat dorsally compressed, the primary ribs obscure, but the secondary ones prominent and bearing hooked bristles.

The genus contains but few species, principally belonging to the Northern Hemisphere. The Tasmanian representative is widely distributed in the Southern Hemisphere.

D. BRACHIATUS, *Sieb.* A small, slender, sub-erect annual, seldom exceeding a few inches, more or less hispid. Leaves on long slender stalks, twice divided, the ultimate segments small, acute, linear, or wedge-shaped. Flowers few together, in a long, slender, very irregular, compound umbel, the flower-stalks slender, and very unequal in length. Fruit ovoid, 1-2 lines long, densely covered with hooked bristles.

Very common, especially in rocky situations. Distributed throughout Australia. Fl. Nov.-Jan

The following weeds of cultivation have become established :—

FŒNICULUM VULGARE, *Gært.* Erect, 3-4 feet high. Leaves much divided, the ultimate segments filiform. Umbels compound, without bracts. Flowers yellow.

SCANDIX PECTEN, *Linn.* Small, spreading or erect. Leaves much divided, ultimate segments linear. Umbel simple, surrounded with bracts. Fruit about 1 inch long, linear.

ORDER XXXVII.—*ARALIACEÆ.*

Pistil usually of 2 intimately blended carpels. Ovarian cavities distinct, and each containing a solitary pendulous ovule. Sepals 5, united at the base, superior.

Petals 5. Stamens similar, and inserted with the petals above the ovary. Fruit succulent and indehiscent.

A large order, of wide distribution, closely related and not-clearly distinct from *Umbelliferæ*.

PANAX.

Ovary 2, rarely 3, celled. Styles distinct, of the same number. Fruit not very succulent, and somewhat flattened.

Common in most warm parts of the Old World.

P. GUNNII, *H.* A small shrub, erect and branched, or elongated and ascending amongst undergrowth. Leaves opposite, stalked, usually divided into 5 lanceolate toothed segments, the terminal one about 1 inch and longest, sometimes the segments 5-7, and themselves much and irregularly segmented. Flowers numerous, in small, rather dense, terminal and lateral umbels. Petals green, 1 line long.

Adamson Peak, near La Perouse, and many parts towards the west. Fl. Dec.-Jan.

> P. SAMBUCIFOLIUS, *Sieb.* Tall shrub. Leaves 1 foot long, with many pairs of oblong-lanceolate rather thick segments, with smooth or toothed margins. Umbels loose, compound, terminal. Recorded in error as Tasmanian. Cultivated in many gardens.

ORDER XXXVIII.—*CAPRIFOLIACEÆ.*

Pistil of 3-5 intimately-blended carpels. Ovarian cavities distinct, with one pendulous ovule in each. Perianth superior. Sepals 3-5, united at the base. Petals similar, tubular at the base, sometimes unequal. Fruit very succulent. Leaves opposite, without stipules.

A world-wide order.

SAMBUCUS.

Corolla regular, with a short tube and spreading lobes.

A small genus, widely distributed.

S. GAUDICHAUDIANA, *D. C.* Erect, succulent shrub, 2-5 feet. Leaves opposite, 8-12 inches long, of 5 or more oblong, toothed segments, the terminal one 3 inches and longest. Flowers small, numerous, white, in a terminal, usually much-branched, panicle Fruit pale yellow, 2-3 lines in diameter.

In many situations in the north; Bass Straits; also in South Australia, Victoria, New South Wales, and Queensland. Fl. Nov.-Jan.

ORDER XXXIX.—*RUBIACEÆ.*

Pistil usually of 2, rarely more, intimately-blended carpels. Ovarian cavities distinct, and usually 1-ovuled. Perianth superior. Sepals united at the base, sometimes obsolete. Petals united at the base, regular, usually 4 or 5. Fruit various, in Tasmanian forms mostly baccate or in detached 1-seeded carpels. Leaves opposite or whorled, with interpetiolar stipules.

A very large and widely-distributed order. The genera vary greatly, rendering the order difficult to define. It is very closely related to *Caprifoliaceæ*.

Leaves opposite.
  Shrubby. Calyx present ... ... 1. *Coprosma.*
  Herb. Calyx obsolete ... ... 2. *Nertera.*
  Herbs. Fowers massed ... ... 3. *Opercularia.*
Leaves whorled. Calyx obsolete.
  Corolla tubular at base ... ... 4. *Asperula.*
  Petals free or nearly so ... ... 5. *Galium.*

1. COPROSMA.

Ovary 2-celled, with 1 erect ovule in each. Fruit, a berry, with 2 pyrenes. Calyx 4-5-lobed. Corolla tubular, with a corresponding number of lobes. Stamens usually 4. Flower, except in *C. moorei*, unisexual.

Chiefly New Zealand and Australian.

Plant erect, 2-10 feet high.
  Leaves 1-3 inches, broad ... ... 1. *C. hirtella.*
  Spiney. Leaves $\frac{1}{4}$-$\frac{1}{2}$ inch, thin ... ... 2. *C. billardieri.*
  Rigid. Leaves $\frac{1}{4}$-1 inch, thick ... ... 3. *C. nitida.*
Procumbent.
  Flower unisexual. Berry red ... ... 4. *C. repens.*
  Flower bisexual. Berry blue ... ... 5. *C. moorei.*

1. C. HIRTELLA, *Lab.* Rigid, erect, slightly branched, 2-5 feet. Leaves oblong to nearly orbicular, stalked and acute, scabrid on the upper surface, $\frac{3}{4}$-2 inches long. Flowers in small terminal or axillary clusters. Berry globose, $\frac{1}{4}$ inch, red to black.

Very common in dry places: also in South Australia, Victoria, and New South Wales. Fl. Jan.

2. C. BILLARDIERI, *Hook.* An erect, slender, much-branched shrub, often attaining many feet, the branchlets often reduced to spines. Leaves elliptical to lanceolate, thin, smooth, usually under $\frac{1}{2}$ inch. Flowers solitary, on short axillary shoots. Calyx acutely 4-lobed. Corolla about 2 lines long in the staminate flowers, the tube very short. Style-branches 4-5 lines long. Fruit broadly oblong, under 3 lines long, red.

Very common, and in various situations; also in Victoria and New South Wales. Fl. Sept.-Oct.

3. C. NITIDA, *Hook.* A rigid, erect, much-branched, shrub, rarely spiney, 3-6 feet. Leaves elliptical to lanceolate, thick, the margins somewhat recurved, usually about $\frac{1}{2}$ inch long, but often $\frac{1}{4}$-1 inch. Flowers similar in detail to *C. billardieri*, but the fruit usually more oblong and nearly twice as large. Prostrate and creeping at a high altitude.

Common in mountainous situations; also in Victoria. Fl. Jan.

4. C. REPENS, *H.* Small, creeping, 1-2 feet. Leaves oblong, stalked, about 2-3 lines long. Flowers solitary, terminal, usually on short lateral branches. Corolla about $\frac{1}{3}$ inch long. Stamens and styles nearly 1 inch long. Fruit red. *C. pumila*, H., included.

Common on the top of most mountains; also in Victoria and New Zealand. Fl. Nov.-Jan.

5. C. MOOREI, *Rod.* A small, prostrate, glabrous, creeping perennial, branches slender, mostly 3-4 inches long. Leaves ovate to ovate-lanceolate, thick, shining, concave, acute, narrowed below into a short stalk $1\frac{1}{2}$-$2\frac{1}{2}$ lines long. Flowers solitary, sessile, terminating short erect branches, bisexual. Calyx-lobes 4, broad, acute, shorter than the ovary. Corolla campanulate, about 1 line long, lobes 4, broad, acute, nearly as long as the tube. Stamens 4, free from the corolla, and inserted at its base. Filaments exceeding the corolla. Anthers erect, ovate, slightly apiculate. Style divided nearly to the base, rather longer than the stamens. Fruit broadly oblong, blue, 3-4 lines long.

Snake Plains, Mount Wellington, Marsh at Mount Charles, Lachlan district, Weldborough, Ironstone Mount, West Coast, and doubtless many other localities, but overlooked. Fl. Nov.

This plant, from its bisexual flower, approaches *Nertera*, but it has the well-developed calyx of *Coprosma*.

2. NERTERA.

Calyx 2-lobed or obsolete. Flowers usually bisexual, otherwise with the structure of *Coprosma.*

Widely spread in the Southern Hemisphere.

N. DEPRESSA, *Banks.* Small, prostrate, pale green, herbaceous. Leaves broadly ovate, 1-2 lines long. Flowers solitary, in the terminal axils. Fruit globose, red, about 2 lines diameter.

South Cape Bay, West Coast, Western Mountains; also occurring in Victoria, New South Wales, New Zealand, and extending to South America. Fl. Nov.-Dec.

3. OPERCULARIA.

Flowers in axillary heads. Sepals 3-5. Corolla 3-5-lobed, short. Stamens 3-5. All the flowers in a head usually blended towards the base, the inner ovarian walls forming a deciduous operculum.

Limited to Australia.

Usually glabrous. Leaves mostly exceeding ½ inch. Capsules
about 2 lines long ... ... 1. *O. ovata.*
Usually scabrous. Leaves mostly under ½ inch. Capsules
about 1 line long ... ... 2. *O. varia.*

1. O. OVATA, *Hook.* Very variable. Prostrate, spreading perennial, from few to many inches, usually smooth or nearly so. Leaves broadly ovate to lanceolate, obtuse or acute, shortly stalked, mostly ½-1 inch long. Flowers few together, in small sessile or shortly-stalked axillary heads. Seeds broad and smooth.

Near Launceston, near George's Bay. It occurs also in Victoria, South Australia, and New South Wales. Fl. Oct.-Jan.

2. O. VARIA, *Hook.* Very variable in growth and details. A prostrate or ascending perennial, seldom exceeding many inches, usually somewhat scabrous or coarsely pubescent, but sometimes glabrous. Leaves oblong to linear, nearly sessile, mostly ¼-½ inch long. Heads axillary, few-flowered. Seeds broad, rugose, the inner face concave, 2-ribbed.

Very common in dry stony places; also in Victoria, South Australia, New South Wales, and Queensland. Fl. Oct -Jan.

4. ASPERULA.

Calyx not apparent. Corolla tubular and 4-lobed. Stamens 4, inserted towards the mouth of the corolla tube. Style 2-lobed. Ovary 2-celled, with 1 ascending ovule in each. Fruit a small, dry, indehiscent, 2-lobed capsule. Seldom developing perfect stamens and pistils on the same plant.

A small and widely-distributed genus, closely allied to *Galium.*

A. OLIGANTHA. *F. v. M.* An extremely variable perennial, seldom exceeding a few inches, depressed, sub-erect, or climbing amongst undergrowth. Leaves from narrow ovate to linear, acute, in whorls of 4, 6, or 8. Flowers few together, in the terminal axils, shortly stalked or nearly sessile. Corolla-tube about 1 line long, lobes about the same length. Pistillate flowers with a rather shorter tube.

Common in all situations and attitudes. Found throughout Australia, except the north and western portion. Fl. spring and summer.

The varieties in selected specimens are so distinct that botanists have, from time to time, made many species of the plant. In the field I have found it impossible to keep the varieties distinct.

The following are the forms placed in specific rank in Hooker's "Flora Tasmaniæ":—

A. *subsimplex.* Glabrous. Leaves linear, 4 in each whorl.
A. *scoparia.* Scabrous-pubescent. Leaves linear, acute, with a fine point, about $\frac{1}{4}$ inch long, 6 in the whorl.
A. *conferta.* Glabrous or nearly so. Leaves linear, not as pointed as in *A. scoparia*, about $\frac{1}{4}$ inch long, 6 in the whorl.
A. *gunnii.* Glabrous or pubescent. Leaves linear, oblong, about $\frac{1}{4}$ inch long, 6 or sometimes 4 in the whorl.
A. *minima.* Slightly scabrous-pubescent. Leaves linear, about line long, usually 8 in the whorl, but sometimes 6.

5. GALIUM.

Calyx not apparent. Corolla minutely tubular below, with 4 spreading lobes. Stamens 4. Style deeply bifid. Ovary 2-celled, with an ascending ovule in each. Fruit small, dry, 2-lobed, indehiscent.

Distributed throughout the temperate regions of the entire globe.

Fruit smooth . . . 1. *G. umbrosum.*
Fruit armed with bristles . .. . 2. *G. australe.*

1. G. UMBROSUM. *Forst.* A very variable perennial. Stems slender, wiry, quadrangular, usually much-elongated, and usually, but not always, with harsh asperities on the angles. Leaves mostly in whorls of 4, usually narrow with recurved margins, but sometimes flat and ovate, generally under $\frac{1}{4}$ inch long. Flowers few together, on short axillary branches, very small. Fruit about $\frac{2}{3}$ line diameter, smooth. *G. gaudichaudi*, D. C.; *G. vagans*, Hook.; *G. ciliare*, Hook.

Very common; also throughout South-Eastern Australia and New Zealand. Fl. spring and summer.

2. G. AUSTRALE. *D. C.* Similar in habit to the last. Scabrous to nearly smooth, but in one form softly pubescent. Leaves in whorls of 4, ovate to lanceolate, 2-4 lines long. Flowers similar to the last, but the fruit armed with hooked bristles. *G. squalidum*, Hook.; *G. albescens*, Hook.

Common in dry gravelly places, ascending to 4000 feet. Found throughout all but the western and northern parts of Australia. Fl. spring and summer.

SHERARDIA ARVENSIS. *Linn.* Small, erect annual, 2-6 inches high. Leaves about 6 in a whorl, lanceolate. Flowers pink, in terminal heads. Sepals 4, conspicuous. Introduced as a weed of cultivation from Europe.

Plants of the following order are establishing themselves in many parts:—

DIPSACEÆ. Flowers in dense heads. Calyx superior, of 4 combined sepals. Corolla tubular below, often irregular. Stamens 4, free. Pistil simple, with a solitary pendulous ovule. Fruit an achene.

DIPSACUS SYLVESTRIS, *Linn.* Erect, 3-4 feet, coarsely hispid. Fruiting-head oblong. Floral scales persistent, rigid, prickly.

SCABIOSA ATROPURPUREA, *Linn.* Erect, smooth. Lower leaves much divided, upper ones entire. Flowers pink to very dark purple. Heads globose in fruit.

ORDER XL. *COMPOSITÆ.*

Pistil of a single carpel. Perianth superior. Calyx reduced to few or many scales or bristles, or united in a minute cup, often obsolete, termed a pappus. Corolla of usually 5 petals, united below. Lobes short, the tube united to the lobes or split down one side, becoming strap-shaped. Stamens 5, inserted on the corolla. Anthers blended in a tube round the style, the filaments free (in

Xanthium the anthers are not coherent). Fruit dry, with one erect seed. The flowers are minute, and usually many together, gathered into a dense flower-like capitulum, surrounded by an involucre of bracts.

A very large order, of world-wide distribution.

Section I. Inner florets tubular, outer ones strap-shaped.

i.	Pappus of long bristles ...	ii.	
	Pappus obscure or none ...	vi.	
ii.	Flowers all yellow...	28.	*Senecio.*
	Strap-florets, white or blue ...	iii.	
iii.	Leaves mostly radical ...	iv.	
	Leaves dispersed ...	v.	
iv.	Leaves linear, long, white ...	2.	*Celmisia.*
	Leaves $\frac{1}{2}$-$1\frac{1}{2}$ inch, green ...	4.	*Erigeron.*
v.	Trees or shrubs, if small, still with a tough woody stem ...	1.	*Olearia.*
	Perennial or annual, never hard, woody ...	3.	*Vittadinia.*
vi.	Outer florets white or bluish ...	vii.	
	Outer florets yellow ...	ix.	
vii.	All florets reddish, often very small ...	5.	*Lagenophora.*
	Inner florets yellow ...	viii.	
viii.	Bracts with scarious margins ...	6.	*Brachycome.*
	Bracts quite herbaceous...		*Bellis.*
ix.	Achenes smooth, nearly straight...	30.	*Cymbonotus.*
	Achenes curved, rough ...		*Calendula.*
	Achenes densely woolly ...		*Cryptostemona.*

Section II. Inner florets tubular, outer ones longer, more deeply divided, or partially strap-shaped.

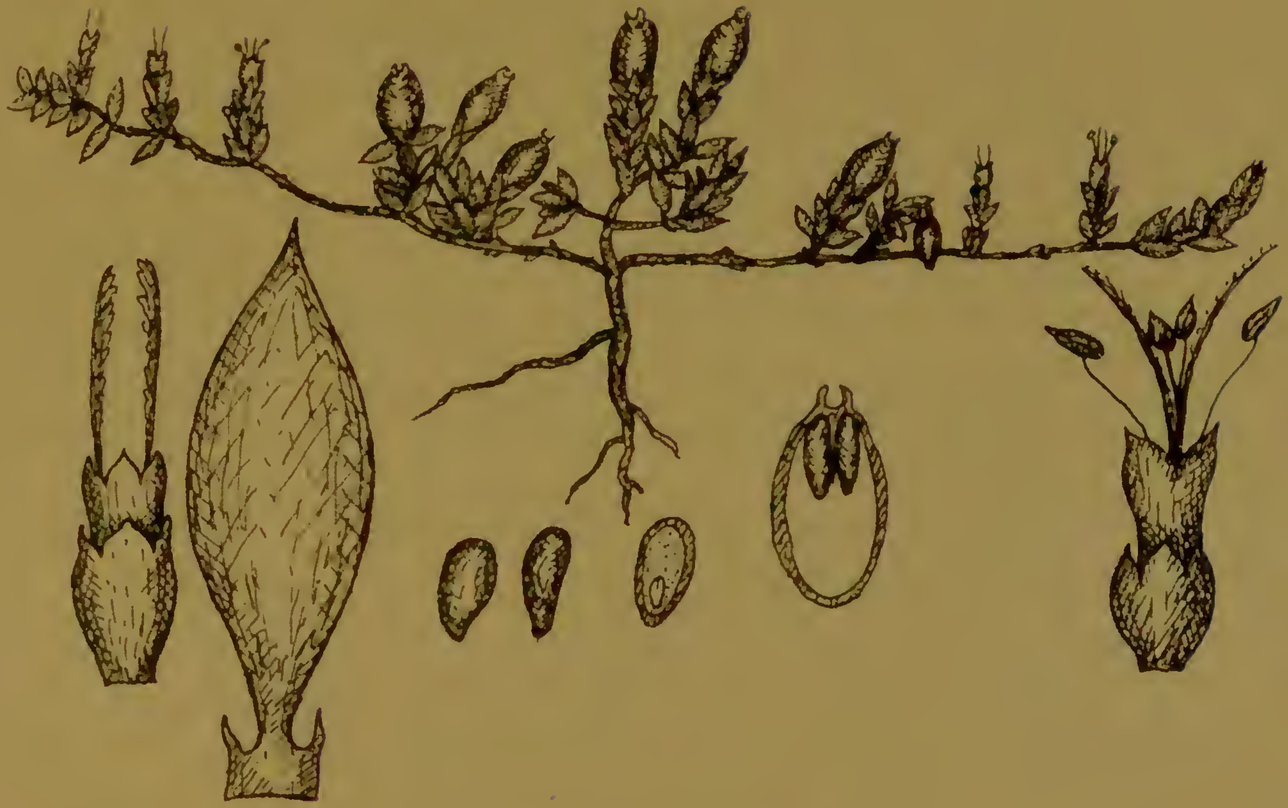
	Flower-heads large. Florets yellow. Pappus of numerous barbed bristles ...	19.	*Podolepis.*

Section III. Florets all tubular. Bracts partially or entirely herbaceous.

i.	Pappus none ...	ii.	
	Pappus copious ...	v.	
ii.	Achenes with 2 horns ...	7.	*Nablonium.*
	Florets numerous, yellow ...	iii.	
	Florets few ...	iv.	
iii.	Leaves generally divided. Flowers terminal ...	8.	*Cotula.*
	Leaves entire or toothed. Flower-heads axillary	9.	*Myriogyne.*
iv.	Leaves filiform. Flowers enclosed at their bases	11.	*Isoetopsis.*
	Flowers terminal above the leaves ...	10.	*Abrotanella.*
v.	Leaves filiform, white. Achenes linear...	17.	*Millotia.*
	Flowers yellow, axillary ...	27.	*Bedfordia.*
	Flowers yellow, terminal...	29.	*Erechthites.*
	Heads yellow, terminal, compound ...	14.	*Craspedia.*

Section IV. Florets all tubular. Bracts considerably or entirely scarious.

i.	Pappus conspicuous ...	ii.	
	Pappus very small or none ...	x.	
ii.	Flower-heads spherical, made up of many smaller heads ...	13.	*Calocephalus.*
	Leaves minute. Plant moss-like. Pappus of few scales ...	26.	*Pterygopappus.*
	Not so constructed...	iii.	
iii.	Flower-heads single ...	iv.	
	Flower-heads clustered ...	vii.	



COPROSMA MOOREI. *Rod.*

iv.	Bracts brown, head spherical, terminal, nearly sessile	18. *Ixiolæna.*
	Bracts narrow, mostly white. Flowers small ...	24. *Raoulia.*
	Heads large, stalked	v.
v.	Flowers yellow. Bracts narrow, inconspicuous	20. *Leptorrhynchus.*
	Bracts very conspicuous, spreading, petaloid .	vi.
vi.	Pappus-bristles plumose	21. *Helipterum.*
	Pappus-bristles plain or barbed	22. *Helichrysum.*
vii.	Shrubs. Flowers small, mostly in loose corymbs	viii.
	Herbs. Flowers, if small, in rather dense clusters	ix.
viii.	Florets mixed with scales...	15. *Cassinia.*
	Florets without scales	23. *Ozothamnus.*
ix.	Flowers rather large. Bracts conspicuous, white or bright coloured	22. *Helichrysum.*
	Flowers small. Bracts brown	25. *Gnaphalium.*
x.	Leaves and bracts woolly, white...	12. *Angianthus.*
	Leaves and bracts green	16. *Rutidosis.*

Section V. Florets tubular. Bracts armed with spines.

Margins of bracts entire	*Carduus.*
Margins of bracts fringed.	*Centaurea.*

Section VI. Florets all strap-shaped.

i.	Pappus-bristles some or all feathery	ii.
	Pappus-bristles all simple	iv.
ii.	Florets intermixed with scales	*Hypochæris.*
	No scales amongst florets	iii.
iii.	Stem leafy, many-flowered	*Picris.*
	Stem leafless, 1-flowered	*Leontodon.*
iv.	Stem many-flowered	*Sonchus.*
	Stem hollow, 1-flowered	*Taraxacum.*
	Stem solid, 1-flowered	31. *Microseris.*

1. OLEARIA.

Bracts herbaceous, or with a scarious margin, in several overlapping series. Outer florets strap-shaped, in one row, white or bluish; inner florets not numerous, tubular, yellow. Achenes short, and broadly cylindrical. Pappus copious, of long, slender bristles. Shrubs or under-shrubs.

An Australian and New Zealand section of *Aster*, differing only in the shrubby habit.

i.	Leaves flat, not under ¼ inch	ii.
	Leaves terete, revolute, or very narrow or minute	vi.
ii.	Leaves opposite. Strap-florets very few ...	1. *O. viscosa.*
	Leaves alternate	iii.
iii.	Leaves triangular	5. *O. obcordata.*
	Leaves oblong	iv.
iv.	Shrub. Leaves ½-4 inches, coarsely toothed, serrated or entire, hairs mostly stellate ...	8. *O. stellulata.*
	Small tree. Leaves 3-4 inches, broad, oblong, acute, minutely toothed	2. *O. argophylla.*
	Shrub. Hairs simple	v.
v.	Leaves entire, oblong, ¾-1 inch	4. *O. persoonioides.*
	Leaves toothed, wrinkled above, ½-1 inch ...	3. *O. myrsinoides.*
vi.	Leaves mostly exceeding ¼ inch	vii.
	Leaves mostly under ¼ inch	ix.

vii.	Flowers solitary, axillary...	9. *O. axillaris.*
	Flowers solitary, terminal, on very long stalks	16. *O. ciliata.*
	Flowers not so disposed	viii.
viii.	Leaves stiff, pungent	6. *O. pinifolia.*
	Leaves filiform, terete	15. *O. glandulosa.*
	Leaves with very recurved margins, stiff, blunt..	7. *O. ledifolia.*
	Margins slightly recurved, glutinous	13. *O. glutinosa.*
ix.	Leaves 2-4 lines	x.
	Leaves minute	xi.
x.	Lower surface of leaves woolly	10. *O. ramulosa.*
	Lower surface hairless	14. *O. hookeri.*
	Leaves linear, 1 line long. Outer florets 2-3	11. *O. floribunda.*
	Leaves oblong, ½ line. Outer florets 6-10	12. *O. lepidophylla.*

1. O. VISCOSA, *Benth.* Shrub of few feet in height. Leaves opposite, oblong, narrowed at both ends, margin plain, silvery-white beneath, about 2-3 inches long. Flowers small, numerous, in corymbs. Florets few, usually 2 only strap-shaped. Achenes smooth or slightly hairy. *Aster viscosus*, Lab.; *Eurybia viscosa*, Hook.

Very common in many situations, especially in the south. It occurs also in Victoria. Fl. Jan.

2. O. ARGOPHYLLA, *F. v. M.* A small tree, of 20-30 feet. Leaves alternate, oblong, pointed, 3-5 inches long, margin usually slightly denticulated, the upper surface indented by the veins, the under surface silvery-white. Flowers small, numerous, in corymbs. Florets not numerous, usually about 5 strap-shaped. Achenes slightly hairy. *Aster argophyllus*, F. v. M.; *Eurybia argophylla*, Hook.

Very common in damp forests. Found also in New South Wales and Victoria. Fl. Nov.-Dec.

3. O. MYRSINOIDES, *F. v. M.* A shrub, seldom exceeding 2 feet in height. Leaves alternate, oblong, denticulate, mostly ½-1 inch long, smooth, shining, and coarsely reticulate above, silvery-white beneath. Flowers few together, in leafy panicles. Florets variable in number but never very numerous; ray-florets usually 5 or under. Achenes smooth. *Aster myrsinoides*, F. v. M.; *Eurybia myrsinoides*, Hook.

Very common on hills. Found also in Victoria, South Australia, and New South Wales. Fl. Jan.

> Var. *erubescens*, F. v. M. Leaves 1-2 inches long, and flowers larger than in the type. *E. erubescens*, Hook. Common, especially in the south.

4. O. PERSOONIOIDES, *Benth.* A shrub of 3-5 feet. Leaves oblong or obovate, very obtuse, margin plain, narrowed towards the base, ¾-1½ inch long, smooth above, silvery-white beneath. Flowers numerous, in leafy panicles. Ray-florets mostly 7 or 8, but often fewer. Achenes hairy. *Eurybia persoonioides*, Hook.

Common in most mountainous districts; rather variable. Fl. Jan.

> Var. *lanceolata*. Leaves lanceolate, about 2 inches, almost acute. Achenes smooth.
>
> Var. *alpina*. Flower-heads somewhat larger. Achenes smooth. Leaves brownish beneath. *Eurybia alpina*, Hook.

5. O. OBCORDATA, *Benth.* A small shrub, seldom exceeding 3 feet. Leaves alternate, usually wedge-shaped, ending in 3 or 5 teeth, or obcordate, the upper surface smooth but often pale, the lower silvery-white. Flowers solitary, on stalks in the axils of the leaves. Florets not numerous, those of the ray usually 5 or 6, but often fewer. Achenes smooth. *Aster obcordatus*, F. v. M.; *Eurybia obcordata*, Hook.

On the summit of most mountains. Fl. Jan.-Feb.

6. O. PINIFOLIA, *Benth.* A shrub, usually about 5 feet high. Leaves alternate, numerous, narrow, linear, rigid, and pungent, margins closely revolute, mostly 1-1½ inch long. Flowers mostly solitary, on long stalks arising from the leaf axils. Florets rather numerous, generally 8 or 10 in the ray. Achenes long, narrow, and smooth. *Aster pinifolius*, F. v. M.; *Eurybia pinifolia*, Hook.

On the summits of Mounts Wellington, Dundas, La Perouse, Sorell, Field, &c. Fl. Jan.-Feb.

7. O. LEDIFOLIA, *Benth.* A spreading shrub, usually 3-4 feet high. Leaves very numerous, blunt, longitudinally concave, linear, with closely revolute margins, ½-1 inch long. Flowers stalked, mostly solitary in the terminal axils, numerous. Florets rather numerous, those of the ray usually 8-10. Achenes smooth. *Aster ledifolius*, F. v. M.; *Eurybia ledifolia*, Hook.

Distribution similar to the last. Fl. Jan.-Feb.

8. O. STELLULATA, *D. C.* A very variable shrub, from 2-10 feet high. The young parts, branches, and under surfaces of the leaves covered with stellate hairs. Leaves alternate, oblong to lanceolate, margin more or less obtusely toothed, ½-4 inches long, upper surface (except when young) smooth and reticulated, under surface silvery-white. Flowers numerous, in leafy panicles or terminating lateral branchlets. Florets numerous, those of the ray mostly 8-12. Achenes hairy. *Aster stellulatus*, F. v. M.; *Eurybia fulvida*, Hook.; *Eurybia gunniana*, Hook.

Very common; also throughout Eastern Australia. Fl. Sept.-Feb.

Amongst its numerous varieties the following deserve special mention:—

Var. *lirata*. Leaves lanceolate, 2-5 inches long. *Eurybia lirata*, Hook.

Var. *quercifolia*. Leaves oblong, entire or obtusely toothed, 1-3 inches long, very scabrous above, often rufous beneath.

9. O. AXILLARIS, *F. v. M.* A shrub of from 2-6 feet, grey from dense covering of woolly hair. Leaves mostly linear with recurved margins, but sometimes much broader, ¼-¾ inch long. Flowers few, sessile in the axils and shorter than the leaves. Florets not numerous, the straps of the ray-florets very short. *Aster axillaris*, F. v. M.; *Eurybia linearifolia*, Hook.

On the North Coast and Islands of Bass Straits. Found on sea-coast throughout the greater part of Australia. Fl. Dec.-Jan.

10. O. RAMULOSA, *Benth.* A small, variable, viscid, twiggy shrub, seldom exceeding 3 feet. Leaves numerous, linear to oblong, margins revolute, 2-6 lines, upper surface scabrous or smooth, lower more or less woolly, acute or nearly so. Flowers numerous, variable in size and colour, from 3-6 lines diameter, and blue and white to yellow and white, usually terminal or terminating short lateral branches, but rarely flowers on simple or branched peduncles clothed only with small bracts. Ray-florets mostly 6-10. Achenes short, slightly compressed, striate or 4-angled. *Aster ramulosus*, F. v. M.; *Eurybia ramulosa*, H.

Very common; also South-East Australia. Fl. Nov.-Feb.

11. O. FLORIBUNDA, *Benth.* Very similar to the last. Leaves and flowers much smaller. The ray-florets usually about 3. *Aster floruhentus*, F. v. M.; *Eurybia floribunda*, H.

Very common in damp situations; also South and East Australia. Fl. Oct.-Jan.

12. O. LEPIDOPHYLLA, *Benth.* A small, much-branched shrub, 2-5 feet. All but the upper surfaces of the leaves white, with copious tomentum. Leaves

minute, clustered, convex, reflexed. Flowers and fruit very close to *O. ramulosa*. *Aster lepidophyllus*, F. v. M.: *Eurybia lepidophylla*, H.

Found in many situations on the coast, and also on the summit of most mountains; also throughout South-Eastern Australia. Fl. Jan.-Mar.

13. O. GLUTINOSA, *Benth.* A shrub seldom exceeding 5 feet. Leaves narrow, linear, but flat, the margins only slightly recurved, ½-1½ inch long. Flowers few together, in short terminal, or apparently lateral, corymbs. Ray-florets 6-10. *Aster glutescens*, F. v. M., *Eurybia linifolia*, Hook., *A. orarius*, F. v. M., included.

North Coast and Bass Straits. It also occurs in Victoria and South Australia. Fl. Nov.-Jan.

14. O. HOOKERI, *Benth.* A small, erect shrub, glutinous, and almost or quite glabrous. Leaves linear, curved, blunt, mostly about 2 lines long, the under surface smooth or nearly so. Flowers few, sessile, and terminal. Ray-florets mostly 6 or 8, usually tinged with blue. Achene short, hairy. Pappus pink. *Eurybia ericoides*, Hook.

Bellerive, Glenorchy, &c., mostly on dry hills; Great Swanport. It occurs also in Victoria. Fl. Dec.

15. O. GLANDULOSA, *Benth.* A shrub seldom exceeding 5 feet. Leaves narrow-linear, the margins so closely involute that they appear cylindric, mostly 1-1½ inch long. Flowers few or many, in terminal loose corymbs. Ray-florets usually 12-15. Achenes small, silky. *Aster glandulosus*, F. v. M.; *Eurybia glandulosa*, Hook.

Common in marshy places and on river-banks. It occurs throughout South-Eastern Australia. Fl. Dec.-Feb.

16. O. CILIATA, *F. v. M.* A small under-shrub, not exceeding 1 foot. Leaves linear, the margins revolute and usually ciliate, ½-1 inch long. Flowers solitary, on long terminal peduncles. Ray-florets numerous. Achenes smooth or silky. *Aster huegelii*, F. v. M.; *Eurybia ciliata*, Hook.

Sorell Creek, South Esk River, Swanport; also throughout Southern Australia. Fl. Jan.

2. CELMISIA, *Cass.*

Flowers broad. Bracts imbricate, in several rows, the margins dry or scarious. Ray-florets in a single row. Disk-florets numerous, tubular. Achenes slightly compressed, with 2 or 3 prominent nerves on each side. Pappus of numerous unequal capillary bristles. Herbs with radical leaves and solitary flowers.

The genus does not differ essentially from *Aster*, and occurs only in New Zealand and Australia.

C. LONGIFOLIA, *D. C.* Herbaceous perennial, covered with loose, white, silky hairs. Leaves mostly radical, linear to linear-lanceolate, 2-12 inches long, acute, base broad and sheathing. Flower-stem 1-1½ foot long. Flower solitary, 1-2 inches in diameter. Ray-florets very numerous, white, but tipped with pink or pale purple. Achenes ¼ inch long, linear, silky. *Aster celmisia*, F. v. M.

Very common in damp alpine situations. It occurs also in New South Wales and Victoria, and is common in New Zealand. Fl. Jan.

3. VITTADINIA.

Bracts imbricate, in several rows, the margins dry or scarious. Ray-florets relatively numerous, in more than one row, strap-shaped in all Australian species. Disk-florets less numerous, tubular. Achenes narrow, compressed, or flat. Pappus of numerous capillary bristles.

A genus confined to the Southern Hemisphere, but of wide distribution. It is intermediate in character between *Olearia* and *Erigeron*.

V. AUSTRALIS, *D. C.* Herbaceous, with a woody base, about 1 foot high, ascending and diffuse. Leaves from obovate to almost linear, alternate, margin entire or coarsely 3-toothed, mostly from ⅓-1 inch long. Flowers solitary, terminal, about ½ inch diameter. Ray-florets narrow, short, blue. Disk-florets longer than those of the ray, yellow. Achenes long, linear, longitudinally striate. *Vittadinia scabra* and *V. cuneata*, Hook.

Very common in many dry situations. It occurs throughout Australia, and is a native also of New Zealand. Fl. Oct.-Feb.

4. ERIGERON.

Bracts numerous, narrow. Receptacle flat or convex. Ray-florets very numerous, in 2 or more rows, the straps very narrow. Disk-florets numerous, tubular. Achenes flattened. Pappus of numerous capillary bristles.

A genus of most extensive distribution, but principally of the Northern Hemisphere. Very closely allied to *Aster*.

E. PAPPOCHROMA, *Lab.* A very variable, tufted herb. Leaves mostly radical, linear-spathulate to obovate, entire, or with few obtuse teeth, from hairy on both surfaces to glabrous, ¼-1½ inch long. Flower solitary, stalk ¼-4 inches long. Ray-florets very numerous and narrow, and hardly exceeding the involucre, pink to white.

Very common on mountain-tops, descending to the coast on the west; also Victoria and New South Wales. Fl. Nov.-Feb.

> Very variable, but quite indivisible into distinct varieties. All the forms noted in Hook. "Flora Tasmaniæ," and described as species, *E. tasmanicus*, *gunnii*, and *stellatus* are here included.

5. LAGENOPHORA.

Bracts nearly equal, margins scarious. Receptacle convex. Ray-florets numerous, strap-shaped, but sometimes very short. Disk-florets numerous and tubular. Achenes somewhat flattened, and, except in *L. emphysopus*, contracted into a beak above. Pappus none. Tufted herbs.

The genus contains but few species, and extends from Eastern Asia to New Zealand.

Flowers with conspicuous spreading ray-florets 1. *L. billardieri.*
Flowers with very short rays.
  Fruit beaked ... 2. *L. huegelii.*
  Fruit without beak ... 3. *L. emphysopus*

1. L. BILLARDIERI, *D. C.* Leaves radical, obovate to spathulate, coarsely toothed, ½-3 inches long, more or less hairy. Flower-stem slender, 2-6 inches long. Flower solitary, ¼-½ inch diameter. Bracts acute. Ray-florets pale blue, slightly exceeding the involucre. Achenes flat, smooth, beak short and curved. *L. latifolia*, H., included.

Very common: also from Tasmania to South and East Asia. Fl. Sept.-Jan.

> Var. *montana*. Generally smaller and glabrous. *L. montana*, H.

2. L. HUEGELII, *B.* The Tasmanian plant possibly differs from the type. Similar to the last, only the bracts obtuse. Straps of the ray-flowers very short and curved. Achenes flat, glandular on the margin, the beak well-developed and curved. *L. gunniana*, H.

Very common in pastures: also throughout Southern Australia. Fl. Nov.-Dec.

3. L. EMPHYSOPUS, *H.* Smaller than the last, usually glabrous. Leaves oblong-spathulate, obtusely toothed, ½-1½ inch long. Stem rather short to 2

inches. Flowers ¼ inch diameter. Bracts very obtuse. Ray-florets very short, concave. Achenes rather flattened, smooth, without a beak. *Solenogyne emphysopus*, F. v. M.

Very common in pastures; also Southern and Eastern Australia. Fl. Jan.-Mar.

6. BRACHYCOME.

Bracts in 2 rows, nearly equal, scarious on the margin. Ray-florets numerous, in a single row, well-developed. Disk-florets numerous, tubular. Achenes flattened, sometimes greatly so, and winged. Pappus of few short scales or quite obsolete. Composed of herbs, with solitary pedunculate flowers. Ray-florets purple or white. Disk-florets yellow.

The genus is purely Australian and New Zealand.

i.	Leaves confined to a radical rosette.	
	Leaves obovate, 1-3 inches long	4. *B. decipiens.*
	Leaves linear, 3-10 inches	5. *B. cardiocarpa.*
	Some leaves on the stem	ii.
ii.	Leaves very deeply lobed	8. *B. ciliaris.*
	Leaves lobed, flowers 1-1½ inch diameter ..	1. *B. diversifolia.*
	Leaves toothed or entire	iii.
iii.	Fruit winged, leaves usually toothed towards the end	iv.
	Fruit not winged, leaves usually entire	v.
iv.	Glabrous or nearly so	6. *B. scapiformis.*
	Minutely hairy all over	7. *B. stricta.*
v.	Peduncle leafless	2. *B. radicans.*
	Peduncle leafy, continuous with main stem ...	3. *B. angustifolia.*

1. B. DIVERSIFOLIA, *Fisch.* A tall, much-branched perennial, or rarely simple and smaller, often 2 feet high. Leaves varying from spathulate and toothed to divided into numerous linear segments. Flowers about 1½ inch diameter. Ray-florets white, numerous. Achenes oblong, thick, longitudinally furrowed. Pappus of short bristles.

Very common in grassy pastures; also throughout South-Eastern Australia. Fl. Nov.-Dec.

2. B. RADICANS, *Steetz.* A small tufted perrennial, emitting creeping stolons. Leaves radical and distributed on the stolons, linear, but often with a few lobes, 1 to 3 inches long. Flower on a slender stalk, usually 3-4 inches long, but variable, about ½ inch in diameter. Ray-florets white. Achenes thick, striate, margin thick, crenate. Pappus of very short stiff bristles.

Damp places. South Esk River, Clydevale, Marlborough, Brighton, &c.; also in Victoria and New South Wales. Fl. Nov.-Jan.

3. B. ANGUSTIFOLIA, *Cunn.* Decumbent and ascending, sometimes stoloniferous. Leaves very variable, from nearly filiform to spathulate, with a long stalk, 1-4 inches long, mostly entire. Flowers ½ inch diameter, white or tinged with blue. Achenes obovate, compressed, usually covered with glands, more especially on the thick obtuse margin. Pappus minute, irregular, or none. *B. graminea*, F. v. M., *Paquerina graminea*, H., and *B. parvula*, H., included. Tasmanian plants are variable, and not sortable into these forms.

Very common in wet places, chiefly on the coast; also in Southern and Eastern Australia. Fl. Nov.-Jan.

4. B. DECIPIENS, *Hook.* A small tufted perennial. Leaves all radical, spreading, obovate, usually coarsely obtusely toothed, 1-3 inches long. Flowers nearly 1 inch diameter, on a long simple stem, or sometimes with 1

leaf-like bract. Ray-florets blue. Achenes flat, with thickened margins. Pappus of very short acute scales.

Very common; also throughout Eastern and South-Eastern Australia. Fl. Sept.-Mar.

5. B. CARDIOCARPA, *F. v. M.* Tufted perennial. Leaves radical, narrow-linear, and very long or shorter and broader, the base broader and sheathing the short stock. Flower about 1½ inch in diameter, on a tall, thick, usually-erect stem, bearing a few distinct leaf-like bracts. Ray-florets white. Achenes flat, with thick margins or narrow wings. Pappus of short coarse bristles. *B. linearifolia*, Hook., but not of De Candolle.

In marshy situations. George's Bay, Formosa, &c. In Victoria, South Australia, and New South Wales. Fl. Sept.-Oct.

6. B. SCAPIFORMIS, *D. C.* A perennial, tufted or creeping, in the typical form smooth or slightly hairy. Leaves at the base of the stem obovate to spathulate, coarsely obtusely toothed, or sometimes entire; leaves on the stem many or few, all small, from spathulate (with few almost acute teeth) to linear and entire. Stem from a few inches to 1½ foot. Flower from 1-1½ inch across. Ray-florets blue. Achenes flat, the margins winged or glandular. Pappus of short acute scales or bristles. *B. tenuiscapa*, H., included.

Very common in numerous situations; also in New South Wales, Victoria, and Queensland. Fl. Nov.-Dec.

7. B. STRICTA, *D. C.* A slender perennial, with ascending, sometimes very elongated straggling stems, most parts lightly clothed with short glandular hairs. Leaves from oblong-spathulate (with few coarse, acute, or obtuse teeth or lobes) to linear and entire, usually freely scattered along the stems. Flowers about 1 inch across. Ray-florets white or blue. Achenes very flat, with usually broad wings. Pappus of very short acute scales or bristles.

Very common in sandy and rocky places; also in New South Wales and Victoria. Fl. Oct.-Feb.

8. B. CILIARIS, *Less.* A sub-erect, branched perennial, stems slender, mostly 8-12 inches long. Leaves scattered, all divided into linear lobes, mostly ¾-1½ inch long. Flowers about ½ inch diameter, usually 5 or 6 at the end of each stem, each one on a slender stalk. Ray-florets white. Inner achenes flattened, tuberculate, winged, outer ones tuberculate and not winged. Pappus inconspicuous, of very small bristles in all Tasmanian specimens examined.

In many parts in central districts, Swansea. Found throughout extra-tropical Australia. Fl. Nov.-Dec.

7. NABLONIUM.

Bracts membranous, few, nearly equal, the inner gradually passing into receptacle-scales. Flowers tubular. Achenes flattened, with 2 rigid, pungent, divergent awns, thickened at the base and continuous with the achenes.

The genus is limited to a single species, peculiar to Tasmania.

N. CALYCEROIDES, *D. C.* A small tufted but creeping perennial. Leaves radical, linear-spathulate, entire or sinuate on the margin, usually acute and narrowed below, the under surface silvery-white, mostly about 1 inch long. Flowers ½-¾ inch across, solitary, on a stalk about as long as the leaves.

Bass Straits, Macquarie Harbour, Trial Harbour. Fl. Dec.

8. COTULA.

Bracts few and nearly equal. Receptacle flat, convex, or conical, without scales. Florets numerous, outer ones with altered or no corolla, all tubular, small. Achenes flattened. Pappus none. All small or decumbent herbs.

A genus of world-wide distribution.

Leaves entire or with few bold lobes or divisions.
  Leaves entire. Flowers 2-3 lines diameter. Bracts broad, blunt ... ... 1. *C. filifolia.*
  Leaves entire or coarsely lobed. Flowers 3-6 lines diameter. Bracts oblong ... ... 2. *C. coronopifolia.*
Leaves much divided.
  Receptacle flat or nearly so.
    Small, slender, and softly hairy ... ... 3. *C. australis.*
    Small, stout, and smooth ... ... 4. *C. alpina.*
  Receptacle conical.
    Bracts short, very broad and blunt .. ... 5. *C. reptans.*
    Bracts ovate ... ... 6 *C. filicula.*

1. C. FILIFOLIA, *D. C.* A small, depressed, almost glabrous annual. Stems ascending, never exceeding a few inches. Leaves filiform, entire, stem-clasping at the base, seldom exceeding 1 inch. Flowers on long slender stalks, under $\frac{1}{4}$ inch diameter. Bracts few, broad, blunt.

Bass Straits. Throughout Southern Australia. Fl. Oct.-Jan.

2. C. CORONOPIFOLIA, *D. C.* A creeping or ascending perennial of variable habit. Leaves entire to coarsely segmented, linear to oblong, 1-3 inches long, stem-clasping. Flowers on long stalks, $\frac{1}{4}$-$\frac{1}{2}$ inch diameter. Bracts narrow, oblong. Florets very numerous, each on a short stalk, the outer row without corollas, but with transparent wings, the inner florets with small, tubular, 4-toothed corollas.

Abundant in wet situations. Its distribution extends to the whole of the southern temperate region, and part of Europe. Fl. spring and summer.

> Var. *integrifolia.* A very small plant, with entire linear leaves, but differing in no essential detail from the type. Is often referred to as a species. George Town, near Hobart, &c.

3. C. AUSTRALIS, *Hook.* A small, slender, tufted, and creeping perennial, slightly clothed with long delicate hairs. Leaves pinnately divided, the divisions usually segmented, mostly $\frac{3}{4}$-1 inch long. Flowers $\frac{1}{4}$ inch across or smaller, on long slender stalks. Bracts oblong, with a distinct midrib and scarious margin. Outer florets without corollas, and on stalks about as long as themselves, inner florets on shorter stalks. Achenes glandular down the centre of each surface.

Very common about Hobart, in numerous situations. Throughout extra-tropical Australia, and many parts of southern temperate regions. Fl. spring and summer.

4. C. ALPINA, *Hook.* A small but stout, tufted or creeping, glabrous perennial. Leaves pinnately divided, segments entire and oblong, or again divided. Flowers $\frac{1}{4}$ inch diameter, on short thick stalks. Bracts ovate-oblong. Outer florets without corollas. Achenes not stalked.

Midlands, Marlborough, and Mount Field East. It has also been found in Victoria, New South Wales, and Queensland. Fl. Dec.

5. C. REPTANS, *Benth.* A small creeping perennial, generally slightly hairy. Leaves pinnately divided, the segments usually again divided into lanceolate segments. Flowers 2-3 lines diameter, on long stalks. Bracts few, short, broad, almost orbicular. Outer florets with short, broad, 2 or 3 toothed corollas, contracted at the orifice, with the style protruding. Achenes rather thick, broad, and notched above. Inner florets with normal corollas, but abortive ovaries. *Leptinella intricata*, Hook.

Very common in marshes. Common to South-Eastern Australia. Fl. Dec.

> Var. *major.* Larger and coarser, but not differing essentially. *Leptinella longipes.* Hook.

6. C. FILICULA, *Hook.* A small tufted or creeping perennial, more or less hairy. Leaves pinnately divided, the segments usually entire. Flowers about $\frac{1}{4}$ inch diameter, or rather less, on stalks usually shorter than the leaves. Bracts ovate. Receptacle conical, but often more nearly convex. Outer florets with conical corollas about half as long as the achene, glandular on the margin, very constricted at the orifice, the style protruding. Achenes broad above, narrowed below. Inner florets with normal corollas and abortive ovaries. *Leptinella filicula,* Hook

Mount Wellington, Hampshire Hills, Mount Field East. Probably on most mountains, but overlooked. It also occurs in Victoria and New South Wales. Fl. Jan.

9. MYRIOGYNE.

Bracts few, nearly equal, scarious on the margin. Receptacle flat or nearly so, without scales. Outer florets with very small tubular corollas, inner ones with more spreading, 4-lobed corollas. Achenes not compressed, but with 3 or 4 prominent ribs. Pappus none.

A genus of few species. Closely allied to *Cotula,* and often combined with it.

M. MINUTA, *Less.* A prostrate, much-branched, spreading plant, 2-8 inches long. Leaves oblong to linear-spathulate, slightly toothed to lobed, $\frac{1}{4}$-$\frac{3}{4}$ inch long. Flowers, in Tasmanian specimens, 2-3 lines diameter, on short stalks, at first terminal, but becoming lateral by the growth of the shoot. Bracts shorter than the achenes, broad and fringed. Corollas very small. Achenes broader above than below, often 4-sided, each angle being obtuse, and a rib down the centre of each surface, a few short hairs dispersed over the surface. Inner florets fertile, the corollas larger, with spreading lobes. *Centipeda orbicularis,* Low.

Widely spread, but not very common, preferring damp, sandy places. Found throughout Australia and New Zealand. Fl. Jan.-Feb.

10. ABROTANELLA.

Bracts few, nearly equal. Receptacle nearly flat, without scales. Florets all tubular. Achenes 4, angled or flat, but not winged. Pappus none.

The genus is essentially of the Southern Hemisphere, and alpine or Antarctic.

Leaves under $\frac{1}{4}$ inch, crowded. Flower obscure, about
1 line long ... ... 1. *A. forsterioides.*
Leaves about 1 inch. Flowers green, about 2 lines
long ... .. 2. *A. scapigera.*

1. A. FORSTERIOIDES, *Hook.* A small moss-like plant, densely clustered into cushion-like mounds. Leaves linear, acute, 2-3 lines long, with broad sheathing bases, very numerous and overlapping. Flowers very small, terminal, on a very short stalk, that lengthens considerably when in fruit Bracts few, broadly triangular or orbicular, and not $\frac{1}{2}$ line long. Florets usually 3 or 4. Achene hard, shining, obovate, hardly $\frac{1}{2}$ line long, marked with 4 pale obtuse ribs. *Scleroleima forsterioides,* H.

Common on the summit of mountains. Fl. Nov.-Dec.

2. A. SCAPIGERA, *F. v. M.* A small tufted perennial. Leaves linear-spathulate, but with sheathing bases, margins recurved, mostly about 1 inch long, numerous Flowers usually 3 or 4 together, on a leafy stem. Bracts of the involucre about 10 in number, oblong-lanceolate, nearly equal, about 3 lines long. Florets about 20, corollas tubular. Achenes oblong, slightly compressed, marked with 4 obtuse ribs. *Trineuron scapigerum,* Hook.

Adamson Peak, Mount La Perouse, Lake St. Clair, Mount Dundas, &c. Fl. Dec.

11. ISOETOPSIS.

Bracts broad, scarious, the outer ones passing into a leafy form. Florets tubular, the inner ones sterile. Achenes cylindrical, with a pappus of few well-developed scarious scales.

Consisting of but one species.

I. GRAMINIFOLIA. *Turcz.* Small, densely tufted. Leaves filiform, with sheathing bases, $\frac{1}{2}$ - $1\frac{1}{2}$ inch long. Stems very short, the flower-heads clustered at the bases of the leaves and buried amongst them.

Domain (Hobart), Cornelian Bay. Possibly introduced. Throughout extra-tropical Australia. Fl. Oct.

12. ANGIANTHUS.

Flower-heads small, few-flowered, with an involucre of a few unequal transparent bracts, many heads collected into a compound head surrounded by an irregular involucre of leaf-like bracts. Florets tubular. Achenes slightly compressed. Pappus minute, dentate, or obsolete.

Limited to Australia.

A. PREISSIANUS, *B.* Annual, very small and erect to much-branched principally at the base, decumbent with ascending tips, mostly white, with woolly hairs. Leaves alternate or sometimes opposite, 1-4 lines long. Flower-heads 1-3 lines diameter. *A. eriocephalus*, B., included; *Skirrophorus preissianus*, and *eriocephalus*, H.

Muddy Plains. George Town. Bass Straits: also throughout extra-tropical Australia. Fl. Nov-Dec.

13. CALOCEPHALUS.

Heads globular, dense, compound. No common involucre, involucres of the individual capitulæ of few unequal bracts. Florets tubular. Achenes slightly compressed. Pappus of few linear plumose scales.

Limited to Australia.

Much-branched. Leaves filiform, $\frac{1}{4}$-$\frac{1}{2}$ inch long ... 1 *C. brownii.*
Leaves linear, 1-2 inches.
  Heads white ... ... 2. *C. lacteus.*
  Heads yellow ... ... 3. *C. citreus.*

1. C. BROWNII, *F. v. M.* Rigid, much-branched, spreading, 1 foot high, white. Leaves alternate, mostly filiform, $\frac{1}{4}$-$\frac{1}{2}$ inch long. Heads white, terminating the branches, $\frac{1}{4}$-$\frac{1}{2}$ inch in diameter. *Leucophyta brownii*, H.

George's Bay, North Coast, Bass Strait. Throughout Southern Australia. Fl. spring and summer.

2. C. LACTEUS, *Less.* A slender, woody perennial. Stems ascending or erect, usually simple, 1-2 feet long, white. Leaves mostly opposite, linear, blunt, $\frac{1}{2}$-2 inches long. Compound head, ovoid to globular, $\frac{1}{4}$-$\frac{1}{2}$ inch diameter, white.

Brighton, North Coast. Throughout Southern and Eastern Australia. Fl. Nov.-Jan.

3. C. CITREUS, *Less.* Close to, and perhaps a variety of, *C. lacteus.* Leaves very narrow and almost acute. Flower-heads yellow.

Richmond. Found also in New South Wales, South Australia, and Victoria. Fl. Nov.-Dec.

14. CRASPEDIA.

Flowers numerous, clustered together in a dense, globular, compound head, surrounded by an involucre of partially scarious bracts. Each flower bearing

3-8 florets, and surrounded by an involucre of several scarious bracts, the receptacle of each flower bearing bracts or scales amongst the florets. Pappus of narrow-linear scales, or more or less plumose bristles.

A small Australian and New Zealand genus.

C. RICHEA. *D. C.* A tufted perennial, in the typical form more or less covered with white tomentum. Stem simple, erect, often 1 foot high. Leaves mostly at the base of the stem, oblong to lanceolate, narrowed and sheathing at the base, 3 or 4 inches long, stem leaves becoming smaller and narrower. Common flower-head, solitary, nearly globular, ½-1 inch diameter. General involucre of about 10 oblong, partially scarious bracts somewhat shorter than the head, the bracts subtending the individual flowers similar, but more scarious. Flowers bearing 6-8 florets, the involucral bracts thin and transparent, gradually passing into the scales of the receptacle. *C. macrocephala* and *alpina*, H., included.

Very common. Throughout extra-tropical Australia. Fl. Oct.-Jan.

15. CASSINIA.

Flowers small and numerous. Bracts many, overlapping, scarious or coloured. Receptacle bearing scarious chaffy scales between the florets. Florets few, tubular. Achenes short, angular or terete. Pappus of numerous fine, simple, or denticulate bristles.

A genus of plants closely allied to *Ozothamnus*, *Helichrysum*, and *Helipterum*. Differing from *Ozothamnus* chiefly in bearing scales on the receptacle. It is principally Australian, but has representatives in New Zealand and South Africa.

Shrubs. Leaves linear to lanceolate.
  Leaf margins revolute. Corymbs mostly loose . . . 1. *C. aculeata*.
  Leaf margins recurved. Corymb rather dense . . . 2. *C. longifolia*.
Herb. Leaves large and broad . . . 3. *C. spectabilis*.

1. C. ACULEATA, *R. Br.* An erect, branched shrub. Leaves narrow-linear, scabrid above, woolly-white beneath, the margins usually revolute, ½-2 inches long. Flowers very numerous, in loose terminal corymbs, about 1½ line long. Bracts of the involucre many, unequal, the outer small, scale-like, and pale brown, the inner petal-like and white, without spreading tips, all blunt. Florets many, each one subtended by a scale as long as and similar to the involucral bracts, only narrower. Achenes usually papillose.

Very common, and often mistaken for *Ozothamnus rosmarinifolius*, from which it can be easily recognised by not having the spreading tips to the inner involucral bracts of that shrub. It occurs throughout South-Eastern Australia. Fl. Dec.

2. C. LONGIFOLIA, *R. Br.* A small, erect, branched shrub. Leaves linear-lanceolate, acute, the upper surface smooth, the lower woolly-white, margins recurved. Flowers about 2 lines long, numerous, in a rather dense terminal corymb. Bracts similar to those of *C. aculeata*, only usually all white. Florets seldom more than 8.

Bay of Fires; also in New South Wales, Victoria, and Queensland. Fl. Dec.

3. C. SPECTABILIS, *R. Br.* An erect, robust herb, of 3-5 feet, with a woody stem. The stems and under surfaces of the leaves woolly-white. Leaves oblong, stem-clasping, 4-6 inches long. Flowers about 2 lines long, very numerous, in a loose terminal panicle. Bracts blunt, straw or pale brown. Florets numerous. Achenes ribbed. *Apalochlamys billardieri*, Hook.

Various places in the north. Bass Straits, Swanport, Three Hut Point; also in Victoria and South Australia. Fl. Dec.

16. RUTIDOSIS.

Bracts unequal, broad, and scarious. Receptacle convex, without scales. Florets all tubular. Achenes hardly compressed. Pappus of many flattened filaments or scales.

A small Australian genus, allied to ***Helichrysum***.

R. PUMILO, ***Benth.*** A slender annual, of from ½-3 inches. Leaves linear, opposite. Flowers about ¼ inch long, usually many together, in a dense, terminal, leafy panicle. Bracts 8-10, nearly equal. Pappus of 6-12 oblong scales. ***Pumilo preissii***, Hook.

George Town, mouth of the Tamar, West Head. Throughout Southern Australia. Fl. Oct.-Nov.

17. MILLOTIA.

Flower cylindrical. Bracts narrow, nearly equal. Receptacle without scales. Florets tubular. Achenes cylindrical, contracted above. Pappus of numerous, fine, barbellate bristles.

The genus is confided to Australian distribution.

M. TENUIFOLIA, ***D. C.*** A small, erect, tufted annual, usually somewhat grey with slight woolly pubescence, usually 2, but rarely even 6 inches high. Leaves linear, ¼-½ inch long. Flowers terminal, solitary. Bracts linear, herbaceous, 3-4 lines long. Florets very numerous. Achenes linear, with usually a long contracted apex, rough.

Very common in stony pastures. Throughout extra-tropical Australia. Fl. Oct.

18. IXIOLÆNA.

Bracts numerous, linear, unequal, herbaceous, the inner ones with scarious or coloured tips. Receptacle flat or convex, without scales. Florets all tubular. Achenes angular or cylindrical, not contracted above into a thin process. Pappus of fine bristles, sometimes barbellate.

A small Australian genus, differing from ***Helichrysum*** chiefly in the herbaceous nature of the involucral bracts.

I. SUPINA, ***F. v. M.*** A small, decumbent, branched perennial. Leaves mostly oblong-spathulate, narrowed into a short stalk, ¼-¾ inch long. Flowers terminal, solitary, hemispherical. Bracts linear, rigid, the inner ones with narrow scarious tips, 2-3 lines long. Florets very numerous. Pappus of 20 or 30 capillary bristles.

Bass Straits; also in South Australia Fl. Dec.

19. PODOLEPIS.

Bracts numerous, unequal. Receptacle flat, without scales. Outer florets either with straps or the lobes of the corolla irregular, inner ones tubular. Achenes slightly compressed. Pappus of capillary bristles.

The genus is limited to Australia.

P. ACUMINATA, ***R. Br.*** Stems few together, from a persistent base, 1-2 feet high, generally rough, with short coarse hairs. Leaves at the base oblong to lanceolate, mostly 3-ribbed, 3 or more inches long; stem-leaves few, smaller, lanceolate, the lateral ribs gradually disappearing. Flowers solitary, large, yellow. Bracts numerous, unequal, thin and transparent, pale brown. Ray-florets spreading, deeply divided into 3-5 lobes, inner florets tubular.

Common in many situations. Found also throughout Eastern and Southern Australia. Fl. Dec.-Jan.

20. LEPTORRHYNCHUS.

Bracts very numerous, unequal, and overlapping, herbaceous, with scarious tips. Florets all tubular, very numerous, exceeding the involucre. Achenes contracted above. Pappus of numerous slender or barbellate bristles. Small, rather rigid herbs.

Limited to Australia.

Bracts narrow, acute, ciliate ... ... 1. *L. squamatus.*
Bracts narrow, acute, glandular ... ... 2. *L. elongatus.*
Bracts broad, with spreading tips ... ... 3. *L. nitidulus.*

1. L. SQUAMATUS, *Less.* Decumbent and ascending. Leaves numerous, linear to lanceolate, white beneath, acute, $\frac{1}{2}$-1 inch long. Flower $\frac{1}{2}$ inch, solitary, on a long terminal peduncle, bearing few small bracts. Bracts narrow, acute, ciliated, closely imbricating.

Very common; also Southern and Eastern Australia. Fl. spring and summer.

2. L. ELONGATUS. *D. C.* Erect, or nearly so, 6-12 inches. Leaves lanceolate, obtuse or acute, mostly 1 inch, gradually reduced up the stem. Flower terminal, $\frac{3}{4}$-1 inch diameter. Bracts numerous, acute, glandular towards the tip, rather narrow below, outer ones thin and transparent.

Macquarie River; also throughout extra-tropical Australia. Fl. Dec.

3. L. NITIDULUS. *D. C.* Decumbent, the branches ascending and pubescent. Leaves as in *L. elongatus.* Flowers $\frac{1}{4}$-$\frac{3}{4}$ inch. Bracts with broad, spreading, brown tips. *L. linearis*, Less.

Very common, mostly in stony places; in Southern Tasmania, George's Bay, Reminé, &c.; also in Victoria and New South Wales. Fl. spring and summer.

21. HELIPTERUM.

Bracts unequal, in several rows, scarious, often spreading and petaloid. Florets numerous, tubular, shorter than the involucre. Pappus of slender or flattened plumose bristles. Flower-heads solitary.

Confined to Australia and South Africa.

Separated from *Helichrysum* on the character of the pappus bristles.

Stems erect, smooth, hairless . ... 1. *H. anthemoides.*
Stems erect, woolly-white ... .. 2. *H. incanum.*
Plant minute, tufted . ... . . 3. *H. exiguum.*

1. H. ANTHEMOIDES, *D. C.* Stems numerous, simple, slender, erect, from a perennial root-stock, hairless, often 1 foot high. Leaves linear, smooth, often rough, mostly $\frac{1}{2}$ inch long. Flowers white, or outer bracts pale brown, $\frac{1}{4}$-1 inch diameter. Bracts scarious. Achenes densely silky hairy. Pappus bristles 15-20.

Common in many parts; also throughout Eastern and Southern Australia. Fl. Jan.-Feb.

2. H. INCANUM. *D. C.* Stems simple, many together, from a perennial base, 6-12 inches high, together with the leaves woolly white. Leaves linear to nearly oblong, mostly at the base of the stems, and 2-4 inches long; stem-leaves few, small, and bract-like. Flowers often $1\frac{1}{2}$ inch diameter. Inner bracts pure white, outer ones pink, brown, or yellow, scarious, and somewhat woolly. Achenes glabrous. Pappus of 10-20 bristles.

Chiefly in the northern part of the Island, Brighton. It occurs throughout Eastern and Southern Australia. Fl. Dec.-Jan.

3. H. EXIGUUM. *F. v. M.* Very small, simple or branched from the base, $\frac{1}{2}$-1 inch high. Leaves filiform, 1-2 lines long. Flowers solitary, terminal, sessile, 1-2 lines diameter. Bracts few, broad, white or straw. Florets fairly numerous.

Summit of Domain (Hobart), Brady's Look-out. Probably on many hills, but overlooked; also extra-tropical Australia. Fl. Nov.

22. HELICHRYSUM.

Bracts unequal, in several rows, scarious, usually brightly coloured, spreading and petaloid. Receptacle without scales. Florets numerous, tubular, usually much shorter than the involucre. Pappus of numerous simple barbellate or nearly plumose bristles.

A widely-distributed genus in warm parts, but more especially in the Southern Hemisphere.

i. Bracts glabrous ... ... ii.
Bracts pubescent externally, and flowers many together, yellow .. .. viii.
ii. Leaves woolly on under surface ... . iii.
Leaves glabrous or nearly so ... vii.
iii. Fowers yellow ... . 1. *H. scorpioides.*
Flowers white or red ... ... iv.
iv. Flowers 1-1½ inch diameter .. .. v.
Flowers ¼-¾ inch ... . vi.
v. Leaves narrow, oblong. Bracts lanceolate ... 2. *H. dealbatum.*
Leaves linear. Bracts narrow and satiny ... 5. *H. leucopsidium.*
vi. Plants small. Leaves radical ... ... 3 *H. pumilum.*
Shrubby. Leaves dispersed .. . ... 7. *H. obtusifolium.*
vii. Stunted, usually 1-flowered ... ... 6. *H. milligani.*
Branched, erect. Leaves often many inches long ... ... 4. *H. bracteatum.*
viii. Leaves lanceolate ... ... 8. *H. apiculatum.*
Leaves linear ... ... 9. *H. semipapposum.*

1. H. SCORPIOIDES, *Lab.* Stems erect, annual, usually unbranched, 6 inches to 1½ foot high. Leaves linear to spathulate, usually white, with pubescence, 1-1½ inch long. Flowers solitary, terminal, straw-yellow, ¾-1½ inch diameter. Bracts narrow, slightly exceeding the flowers.

Very common: also Southern and Eastern Australia. Fl. spring and summer.

2. H. DEALBATUM, *Lab.* Stems simple, ascending from a persistent base. Lower leaves lanceolate and 2 inches long, upper ones linear and shorter, all silvery-white beneath Flowers terminal, solitary, about 1 inch diameter. Bracts in many rows, the outer ones short and broad, pink: the inner row lanceolate, white, striate: the innermost row similar but shorter. Florets numerous, very short, much exceeded by the involucre. Achenes usually papillose. Pappus bristles barbellate, coarsely so towards the end.

Common, mostly in poor soil on hills: also in Victoria. Fl. spring and summer.

3. H. PUMILUM, *Hook.* Small, densely-tufted plant. Leaves clustered at the base of the stem, linear, with revolute margins, usually smooth above, 1-2 inches long. Flower-stem usually 2-4 inches long, with few small linear leaf-like bracts. Flower about ¼ inch across. Bracts in many rows, mostly broadly lanceolate, outer ones pale brown or red, the inner ones white. Florets numerous, and shorter than the involucre. Achenes usually densely silky hairy. Pappus bristles barbellate.

Macquarie Harbour, Mt. Dundas, Mt. La Perouse, Adamson Peak, and numerous other mountains. Fl. Dec.-Jan.

4. H. BRACTEATUM, *D. C.* An erect perennial, more or less simple, and 1-flowered, or freely branched, 2 feet high, with many flowers, in a loose leafy panicle at the end of the branches. The stems and leaves more or less rough, but not developing a woolly covering. Leaves scattered, oblong to linear, 1-4 inches long. Flowers mostly 1½ inch diameter. Bracts numerous, broad, bright yellow, shining, the outer ones darker. Florets very numerous, much

shorter than the involucre. Achenes linear, usually smooth. Pappus bristles cohering at the base, almost plumose. *H. lucidum*, Henck.

Very common; chiefly on sea-coast and marshy situations. Found throughout Australia. Fl. Nov.-Jan.

> Var. *albidum*, D. C. A variety with white, rather narrower involucral bracts, but with the same achenes and pappus. *H. papillosum*, Hook.

5. H. LEUCOPSIDIUM, *D. C.* Usually a rather tall, slender perennial or more or less decumbent, stems about 1 foot, slightly and loosely woolly. Leaves mostly linear, sometimes broader, margins recurved but sinuate, upper surface rough but green, under surface white, mostly about $1\frac{1}{2}$ inch long, freely scattered along the stems. Flowers large, terminal, solitary, about $1\frac{1}{2}$ inch diameter. Bracts very numerous, linear-lanceolate, acute, satiny. Florets very numerous, much shorter than the involucre. Achenes smooth. Pappus bristles slightly barbellate.

Gould's Country, North Coast, Bass Straits; also throughout the coastal parts of extra-tropical Australia. Fl. Nov.-Dec.

6. H. MILLIGANI, *Hook.* A small, tufted perennial, with simple, erect, woolly-white stems, about 6 inches high. Leaves mostly at the base, the lowest stalked, ovate, flat, gradually becoming lanceolate above. Flower-heads terminal, solitary, $1\frac{1}{2}$ inch diameter. Bracts numerous, broad, white or tinged with pink or straw. Florets numerous, much shorter than the involucre. Achenes and pappus similar to those of *H. bracteatum*, of which plant this is doubtless but an alpine form.

Mount Sorell, Mount La Perouse, Adamson Peak, &c. Fl. Dec.-Jan.

7. H. OBTUSIFOLIUM, *F. v. M. et Sond.* A small, erect, branched under-shrub. Leaves linear, with more or less revolute margins, white beneath, [illegible] inch long. Flowers terminal, solitary or few, in a loose panicle, $\frac{1}{2}$-$\frac{3}{4}$ inch. Bracts broadly lanceolate, the outer ones tinted with brown, inner ones white. Florets numerous, much shorter than the involucre. Achenes smooth or papillose. Bristles strongly barbellate. *H. spiceri*, F. v. M., included.

Huonville, Longley, Bass Straits; also extra-tropical Australia. Fl. Nov.-Dec.

8. H. APICULATUM, *D. C.* A sub-erect perennial, several simple stems arising from a persistent base, 1-2 feet high, and together with the leaves clothed with close white tomentum. Leaves scattered, mostly spathulate to lanceolate, 1-2 inches long. Flowers many, clustered at the ends of the stems, mostly $\frac{1}{2}$-$\frac{3}{4}$ inch diameter. Bracts small, numerous, lanceolate, not much exceeding the florets, bright yellow, or sometimes the outer ones brown, mostly woolly or ciliate. Achenes smooth or slightly scabrid. Pappus bristles few, strongly denticulate, almost plumose.

Very common. Common throughout Australia. Fl. spring and summer.

9. H. SEMIPAPPOSUM, *D. C.* A sub-erect perennial, many simple branches arising from a persistent base, together with the under surfaces of the leaves covered with close white tomentum. Leaves scattered, numerous, narrow-linear, mostly about 1 inch long. Flowers numerous, in dense terminal clusters, $\frac{1}{4}$ inch diameter. Bracts small, numerous, more or less woolly, hardly or not at all exceeding the florets. Achenes smooth. Pappus bristles few, slightly denticulate below, almost plumose towards the point.

Common. Probably similar distribution to the last. Fl. spring and summer.

> Though this and *H. apiculatum* are thoroughly distinct when typical plants are examined, they are so clearly connected by varieties that this becomes doubtfully distinct as a species.

23. OZOTHAMNUS.

Flower-heads relatively small. Bracts unequal, in several rows, imbricate, the inner ones sometimes with short spreading tips, scarious. Receptacle not bearing scales. Florets few to many, tubular, usually exceeding the involucre. Pappus bristles rather numerous, slender, thickened or barbellate towards the ends. Shrubs; the flowers in loose or dense terminal or lateral corymbs.

Confined to Australia and New Zealand.

> Closely allied to, and often combined with, *Helichrysum*; but the Tasmanian forms constitute a sufficiently circumscribed group to still maintain the genus.

i. Leaves linear to lanceolate ... ... ii.
Leaves oblong or obcordate ... . ix.
Leaves minute ... ... x.
ii. Flowers nearly globose ... ... 1. *O. reticulatus.*
Flowers cylindric or oblong ... ... iii.
. Bracts without white spreading tips ... ... iv.
Bracts with well-developed white tips... ... v.
iv. Leaves linear, spreading ... ... 2. *O. cinereus.*
Leaves spathulate, overlapping ... ... 13. *O. lycopodioides.*
v. Flowers mostly terminal ... . vi.
Flowers mostly terminating lateral branches ... 7. *O. thyrsoideus.*
vi. Florets few. Flowers narrow ... ... vii.
Florets fairly numerous. Flowers broad ... viii.
vii. Leaves with very recurved margins, hairy and scabrous above... ... ... 3. *O. rosmarinifolius.*
Leaves flat, glabrous above ... ... 4. *O. ferrugineus.*
viii. Leaves obtuse, rather rigid ... ... 5. *O. ledifolius.*
Leaves slender, acute or nearly so ... ... 6. *O. gunnii.*
ix. Leaves oblong, under $\frac{1}{2}$ inch . . .. 8. *O. backhousii.*
Leaves oblong, exceeding $\frac{3}{4}$ inch ... ... 9. *O. antennaria.*
Leaves obcordate. Flowers yellow ... ... 10. *O. obcordata.*
x. Leaves about 1 line, spreading ... ... 14. *O. selaginoides.*
Leaves minute, appressed to stem ... ... 11. *O. hookeri.*
Leaves minute, reflexed... ... ... 12. *O. scutellifolius.*

1. O. RETICULATUS. *D. C.* Erect shrub, 5-8 feet. Leaves linear, obtuse, 1-2 inches, margins recurved, upper surface glabrous and indented by the veins. Flowers numerous, nearly $\frac{1}{4}$ inch in diameter. Bracts without spreading tips. Florets very numerous, exceeding the involucre, giving the flower a spherical appearance. *Helichrysum reticulatum*, Less.

Southport Lagoon, Blowhole, Eaglehawk Neck, Pirates' Bay, &c. Fl. Jan.

2. O. CINEREUS. *D. C.* Erect shrub, 5-8 feet. Leaves linear, obtuse, $\frac{1}{2}$-$\frac{3}{4}$ inch, margins recurved, upper surface glabrous. Flowers numerous, terminal, rather large. Inner bracts without white spreading tips. *Helichrysum cinereum*, F. v. M.

Recherche, Ralph's Bay, George's Bay, Scamander, and North Coast; Bass Straits; also South Australia, Victoria, and New South Wales. Fl. Dec.

> Var. *bracteolatus*. Stunted. The leaves more rigid, the grosser foliar bases persistent. Flowers broader. *Helichrysum bracteolatum*, B. Flinders Island.

3. O. ROSMARINIFOLIUS. *D. C.* A somewhat variable shrub, erect, branched, rigid, 3-6 feet. Leaves linear, acute, with closely-recurved margins, the upper surface usually coarsely scabrid, $\frac{3}{4}$-1$\frac{1}{2}$ inch long. Flowers small and slender, very

numerous, in many terminal corymbs. Inner bracts white and spreading. Florets few. *Helichrysum rosmarinifolium*, Less.

Very common, chiefly in damp places: also in Victoria and New South Wales. Fl. Nov.-Jan.

> Var. *ericifolius*. Stunted. Leaves smooth or hairy, more rigid and obtuse, and relatively broader, ¼-½ inch. Flowers larger. Very common.

4. O. FERRUGINEUS, *D. C.* A taller and more spreading shrub. Leaves linear-lanceolate, flat margin, very slightly recurved, upper surface smooth, 1-2 inches long. Flowers rather smaller and with fewer florets, otherwise as in the last. *H. ferrugineum*, Less.

Very common in damp places; also South Australia, Victoria, and New South Wales. Fl. Dec.

> Var. *gravesii*. Erect, very much branched and spreading. Leaves rusty beneath, scented.

5. O. LEDIFOLIUS, *H.* Rigid, erect, branched, 3-5 feet. Leaves rigid, broadly linear, obtuse, with recurved margins, upper surface smooth, ¼-½ inch long. Flowers rather large, ⅓ inch long. The inner bracts with conspicuous, white, spreading tips. *H. ledifolium*, F. v. M. Continuous with *O. rosmarinifolius*, var. *ericifolius*.

Common on mountains; also in Bass Straits. Fl. Jan.

6. O. GUNNII, *H.* Slender, erect, 3-6 feet. Leaves narrow-linear, obtuse or acute, ½-¾ inch, margins recurved, upper surface glabrous. Flowers terminal, rather large, usually not very numerous. Inner bracts with white spreading tips. *H. gunnii*, F. v. M.

North Coast, Bass Straits. Fl. Dec.

7. O. THYRSOIDEUS, *D. C.* A much-branched, slender, weak, sub-erect, spreading shrub, 4-8 feet. Young shoots glabrous or hispid. Leaves narrow-linear, obtuse or acute, ½-1½ inch long, margin slightly recurved, upper surface smooth. Flowers terminating numerous lateral branches or terminal in stunted exposed plants, flowers otherwise as in *O. rosmarinifolius*.

Common in shaded situations on hills. Often included in *O. rosmarinifolius*. Fl. Jan.

8. O. BACKHOUSII, *H.* Erect, branched, and rigid, 1-3 feet. Leaves narrow-oblong to nearly linear, ⅓-½ inch long, margins slightly recurved, upper surface smooth. Flowers in dense terminal corymbs, relatively large, ⅓ inch, with numerous florets. *H. backhousii*, F. v. M.

Common on mountains. Mount Wellington, Mount Sorell, Mount Olympus, Mount Murchison, &c. Fl. Jan.

> In the lowland form the leaves are broad, sometimes nearly orbicular, and the flowers very slender with few florets, the white tips of the inner bracts very conspicuous. Port Arthur, Swanport.

9. O. ANTENNARIA, *H.* An erect shrub, 8-12 feet. Leaves usually rather narrow-obovate, ¾-1 inch long. Flowers rather large, in numerous loose terminal corymbs. Bracts without spreading tips. Florets numerous. *H. antennarium*. F. v. M.

Common on mountains, chiefly in the south and west. Fl. Nov.-Dec.

10. O. OBCORDATUS, *D. C.* A small, erect, much-branched shrub, attaining 4-5 feet. Leaves usually about 2 lines long, broadly obcordate, narrowed below into a very short stalk, varying from this to much longer and almost oblong, very fragrant. Flowers rather small, yellow, very numerous, in a spreading terminal corymb. Bracts woolly, less closely appressed than in allied species.

the inner ones without white spreading tips. Florets not numerous. *Helichrysum obcordatum*, Benth

Common about Hobart; also in New South Wales and Victoria. Fl. Dec.

11. O. HOOKERI, *Hook.* A small, erect, rather stiff, much-branched shrub. Leaves scale-like, ½-1 line long, ovate, erect, and closely pressed with the upper surfaces against the stem, margin closely recurved against the lower surface so as to almost conceal it. Flowers in small dense clusters at the ends of the branches. Bracts few, outer ones marked with brown or red, the inner with white tips. *Helichrysum baccharoides*, Benth.

Very common on mountains. It occurs also in Victoria and New South Wales. Fl. Jan.-Feb.

12. O. SCUTELLIFOLIUS, *Hook.* A small, erect shrub, covered, except the upper surfaces of the leaves, with dense white tomentum. Leaves scale-like, about ¼ line long, closely reflexed so that the lower surface is pressed against the stem, distant from one another. Flowers few together, in small close heads at the ends of lateral branchlets. Bracts few, pale, woolly, the inner with small, but not spreading, white tips. Florets usually about 10-12. *Helichrysum scutellifolium*, Benth.

Port Arthur, George's Bay, Riverton, track from New Norfolk to Huon, &c. Fl. Nov.

13. O. LYCOPODIOIDES, *Hook.* An erect shrub, slightly branched, the branchlets arising from under the old clusters of flowers. Leaves about 2 lines or under, oblong to almost linear, erect, concave above. Flowers in dense terminal heads or clusters. Bracts numerous, marked with brown or purple, the inner without spreading tips. Florets numerous. *Helichrysum lycopodioides*, Benth.

Swanport, Prosser River, Kelvedon. Fl. Oct.

14. O. SELAGINOIDES, *Hook.* A spreading, much-branched under-shrub, seldom above 1 foot high. Leaves about 1 line long, oblong, thick, spreading, base decurrent. Flowers in small, dense, terminal clusters. Bracts few, pale brown, the inner with short, white, spreading tips. Florets about 10. *Helichrysum selaginoides*, Benth.

Mountains near Lake Crescent. Fl. Dec.

24. RAOULIA.

Bracts unequal, in several rows, scarious, the lips of the inner ones sometimes white and spreading. Receptacle without scales. Florets not numerous, some outer ones with long tubular corollas and no stamens, the inner ones with shorter tubular corollas and often sterile. Small tufted perennials.

The genus is distributed throughout southern cool climates, and is very closely allied to *Gnaphalium*.

Bracts without white tips . . . . 1. *R. planchoni.*
Bracts with obtuse white tips.
  Leaves obcordate, white ... ... 2. *R. catipes.*
  Leaves narrow-obovate, rusty ... . 3. *R. meredithæ.*

1. R. PLANCHONI, *H.* Densely-tufted perennial, a few inches diameter, covered with white or rusty tomentum. Leaves very numerous, obovate, 2-5 lines long. Flower solitary, on a short stalk, involucre 2-3 lines long. Bracts narrow, brown, acute, spreading after the fall of the fruit. *Gnaphalium planchoni*, H.; *Antennaria planchoni*, F. v. M.

Mounts Wellington, Dundas, Ben Lomond, Olympus, &c. Fl. Dec.-Jan.

2. R. CATIPES, *H.* Very similar to the last, only silvery-white. Leaves mostly obcordate. Flowers terminal, sessile or nearly so, about 2 lines long.

Bracts obtuse, the inner ones with conspicuously white tips, but not spreading. *Antennaria nubigena*, F. v. M.: *Leontopodium catipes*, F. v. M.

On most mountain-tops, but not common in the south; also in Victoria and New South Wales. Fl. Dec.

3. R. MEREDITHÆ, *F. v. M.* Tufted, the stems 1-2 inches long, usually erect and densely massed. Leaves oblong, often very narrow, rusty, 1-2 lines long. Flowers solitary, sessile, or on fairly long stalks. Bracts narrow obtuse, the white tips long and spreading. *Leontopodium meredithæ*, F. v. M.

Common on the mountains of the south and west. Fl. Dec.

25. GNAPHALIUM.

Bracts unequal, partially or entirely scarious, rarely with spreading tips. Receptacle without scales. Florets seldom numerous, tubular, the greater number without stamens, a few central ones hermaphrodite and barren. Pappus of numerous simple or barbellate bristles. All herbaceous.

The genus is represented almost throughout the world. It forms the stock from which many adjoining genera are artificially separated.

Leaves green above ... ... 2. *G. japonicum.*
Plant white.
  Leaves filiform, 2-4 lines ... ... 4. *G. indutum.*
  Leaves 1-2 inches.
    Bracts straw-coloured ... ... 1. *G. luteo-album.*
    Bracts greenish ... ... 3. *G. alpigenum.*
    Bracts red with white tips ... . *G. candidissimum.*

1. G. LUTEO-ALBUM, *D. C.* Erect, woolly-white, 6 inches to 1 foot. Leaves linear to lanceolate with a broad base, the lower ones broader and stalked. Flowers numerous, in a dense panicle, about 2 lines long. The bracts light brown, shining, obtuse. Florets numerous.

As widely distributed as the genus. Fl. Nov.-Mar.

2. G. JAPONICUM, *Thunb.* Depressed or erect annual or perennial, very variable, 1-12 inches high, the stem and under surfaces of the leaves white. Leaves green above, lanceolate to obovate, margin usually undulate, ¼-1 inch long. Flowers few to numerous, in dense terminal heads, usually surrounded with a few leaves. Bracts rather narrow, brown, about 2 lines long. Florets few. *G. involucratum*, Forst., and *G. collinum*, Lab., included.

Very common. On the sea-coast assuming a decumbent habit, and perennial. Throughout extra-tropical Australia, and extending from New Zealand to Japan. Fl. spring and summer.

> Var. *radicans*. Leaves linear, with recurved margins. Generally dwarfed. Flowers often solitary. On mountains, except on the West Coast, where it descends to the sea; also in Victoria.

3. G. ALPIGENUM, *H.* Ascending, 2-6 inches, white, except the upper surfaces of the older leaves. Leaves spathulate to obovate, stalked, ¼-2 inches long. Flowers few or many, in dense terminal heads, subtended by a few leaves. Bracts rather narrow, 1-2 lines long, pale, some green. Florets few.

About the summit of most mountains; also in Victoria. Fl. Dec.-Jan.

4. G. INDUTUM, *H.* Small, much-branched, slender, erect or depressed, 2-4 inches, woolly-white all over. Leaves very narrow-linear, 1-6 lines. Flowers few or many together, in numerous terminal clusters. Bracts pale, narrow, about 1 line long. Florets few.

Muddy Plains, Circular Head, George Town; probably in many coastal marshes, but overlooked; also throughout extra-tropical Australia. Fl. Dec.

G. candidissimum, *Lam.* Erect, woolly-white, 6-8 inches. Leaves spathulate. 1-2 inches. Flowers small, numerous, in terminal sessile heads. Bracts red with white tips. Introduced and widely spread.

26. PTERYGOPAPPUS.

Bracts few, scarious. equal or nearly so. Receptacle without scales. Florets few, outer one with very slender corollas and without anthers, inner ones with broader corollas, hermaphrodite and sterile. Pappus of few rather broad, flat, barbellate bristles or scales.

Limited to a single species, endemic in Tasmania.

P. lawrencii, *H.* Small, densely tufted, forming dense mats. Leaves broadly cordate. imbricate. mucronate, ½-1 line long. Flowers solitary, terminal, sessile, and buried in the leaves or shortly stalked. Bracts ½ line long.

On the summits of most mountains, in sage-coloured patches amongst darker green plants of similar habit. Fl. Dec.-Jan.

27. BEDFORDIA.

Bracts not very numerous, nearly equal, with a few smaller ones at the base, margins scarious. Florets numerous, tubular. Pappus of numerous barbellate bristles. Shrubs with axillary flowers.

Limited to the two Australian species. Differing from *Senecio* only in the flowers being axillary.

Flowers clustered	1. *B. salicina.*
Flowers solitary, rarely 2 in an axil ...	2. *B. linearis.*

1. B. salicina, *D. C.* Tall shrub, 6-15 feet. Leaves broadly lanceolate, stalked, acute. flat, white beneath, 4-6 inches long. Flowers numerous, in axillary panicles, about 3 lines long. *Senecio bedfordii*, F. v. M.

Very common; also in Victoria and New South Wales. Fl. Nov.-Dec.

2. B linearis, *D. C.* Very similar to the last, only smaller. Leaves linear, with recurved margins, ½-4 inches long. Flowers usually solitary, never numerous in the axils. ½ inch long. *Senecio billardieri*, F. v. M. Some forms have the narrow recurved leaves of this with the flowers of the last.

Common on hills; Bass Straits. Fl. Dec.-Jan.

28. SENECIO.

Bracts nearly equal, with a few smaller ones at the base. Florets numerous, yellow outer ones usually strap-shaped, the inner ones tubular, sometimes all tubular. Pappus of very numerous barbellate bristles.

A very large genus, of world-wide distribution.

i.	Outer florets strap-shaped	ii.
	Florets all tubular	vii.
ii.	Tree. Leaves linear, thick	5. *S. centropappus.*
	Leaves broad, stalked, entire	iii.
	Leaves narrow or divided	iv.
iii.	Leaf-margin entire	1. *S. papillosus.*
	Leaf-margin crenate	2. *S. primulifolius.*
iv.	Flowers numerous, in terminal panicles	v.
	Flowers few, often solitary	vi.
v.	Leaves broadly stem-clasping	7. *S. velleyoides.*
	Leaves narrow, entire	8. *S. australis.*
	Leaves lobed or divided	6. *S. lautus*

vi. Decumbent, leaves linear ... ... 4. *S. spathulatus.*
Erect, leaves usually lobed ... ... 3. *S. pectinatus.*
vii. Erect. Leaves entire ... ... 9. *S. odoratus.*
Decumbent. Leaves lobed ... ... *S. vulgaris.*

1. S. PAPILLOSUS. *F. v. M.* Leaves radical, oblong, obtuse, ¼-¾ inch, upper surface rough, with small coarse hairs, stalk slender and as long as the lamina. Stem erect, bearing few bracts, 4-8 inches. Flower terminal, solitary, ¾ inch diameter.

Adamson Peak, Mount La Perouse. Fl. Dec.-Jan.

2. S. PRIMULIFOLIUS. *F. v. M.* Leaves mostly radical, oblong or ovate-cordate, crenate or obscurely toothed, usually coarsely marked with the veins, ¾-2½ inches long, on a stalk longer or shorter than the lamina. Stem often 6-12 inches long, with few bracts. Flowers usually 3 or 4, terminal, ¾ inch diameter.

Mount La Perouse. Fl. Dec.-Jan.

3. S. PECTINATUS. *D. C.* Perennial, somewhat creeping. Leaves mostly radical at the base of the flower-stem, spathulate, ½-¾ inch long, pinnately divided into numerous short obtuse lobes. Stem slender, 4-8 inches, with many leafy bracts. Flower terminal, solitary, ¾ inch diameter, orange-yellow. Involucral bracts continuous with the stem bracts, and passing, in a graduated size, to the long inner bracts.

It occurs on most mountains; also in Victoria and New South Wales. Fl. Oct.-Feb.

The species is most variable. The following are marked varieties:

Var. *ochroleuca.* The habit of the type, only the leaves are nearly entire, linear, and the flowers are a pale cream colour. Common on many mountains.

Var. *leptocarpus.* Leaves 2-3 inches long, broadly spathulate, coarsely obtusely toothed. Flowers 3-6, in a loose terminal panicle. Mount Wellington, Hartz Mountain, Mount Sorell, Mount La Perouse. Growing with the type, but maintaining its distinctness.

Var. *pleiocephalus.* Tufted, stems numerous. Leaves spathulate and lobed, as in the type, but more dispersed on the stems, about 1 inch long. Stems 6-9 inches. Flowers smaller than in the type, 3-6, in a loose terminal panicle. Ironstone Mountain and western mountains. But for the peculiar outer bracts of the involucre, it would pass for a form of *S. lautus.*

4. S. SPATHULATUS. *A. Rich.* Usually an ascending, much-branched perennial, but sometimes almost shrubby. Leaves linear-spathulate to obovate, coarsely and remotely toothed, stalked to stem-clasping, rather thick, mostly ¾-1½ inch long. Flowers few, rather large, on long leafy stalks. Ray-florets 12-20, bright yellow, spreading.

In many places on the coast. It also occurs in New South Wales, Victoria, and South Australia. Fl. Dec.

5. S. CENTROPAPPUS. *F. v. M.* A tall, much-branched shrub or small tree, 10-12 feet high. Leaves broadly linear, thick, fleshy, 2-4 inches long. Flower-heads many, in corymbs. Involucral bracts about 8, ovate, blunt, 2-2½ lines long. Strap-shaped florets 4-6. Disk-florets 10-12. Pappus bristles almost plumose. *Centropappus brunonis.* H.

Mount Wellington, Mount Dromedary. Fl. Jan.

6. S. LAUTUS. *Forst.* A much-branched, erect perennial, 1-3 feet. Leaves very variable, usually 3-4 inches long, and divided into few or many broad or narrow linear segments, but sometimes only toothed or even quite entire, at other the segments are numerous and capillary. Flowers few, in a loose terminal panicle, ¾ inch diameter. The inner bracts all equal, the outer all short and

clothing the base of the involucre. Strap-florets about 12, much exceeding the involucre. *S. capillifolius*, H., included.

Very common; also throughout Australia and New Zealand. Fl. Nov.-Jan.

> In some of the entire-leaved forms the ray-florets are very short, hardly spreading beyond the involucre.
>
> One plant from George's Bay, in very poor condition, but apparently belonging to this species, has flowers only half as large as the type; the straps of the outer florets are very minute, in some flowers appearing absent.

7. S. VELLEYOIDES, *D. C.* Erect, branched, 2-6 feet. Leaves broadly lanceolate to oblong, coarsely toothed, broadly stem-clasping, 3-6 inches. Flowers numerous, in a terminal corymb, about 1 inch diameter.

Common on damp hills, especially after fires; also Eastern Australia. Fl. Jan.-Feb.

8. S. AUSTRALIS, *Willd.* Tall, erect, much-branched, 3-6 feet. Leaves linear-lanceolate, entire, 3-6 inches long. Flowers numerous, in loose terminal corymbs, about ½ inch diameter. Bracts about 10, obtuse, 2 lines long, all equal, except a few short ones at the base. Ray-florets 5 or 6. *S. dryadeus*, Sieb.

Very common, especially after fire; also South Australia, Victoria, and New South Wales. Fl. Nov.-Feb.

9. S. ODORATUS, *D. C.* Stout, erect, 2-3 feet. Leaves narrow-oblong, obscurely toothed, base stem-clasping, 2-4 inches. Flowers numerous, in dense terminal corymbs. Bracts about 8, 2 lines long. Florets all tubular, exceeding the involucre.

North-East Coast, Bass Straits; also Southern and Eastern Australia. Fl. Dec.-Jan.

> S. VULGARIS, *Linn.* Small, spreading annual. Leaves obovate, coarsely lobed. Flowers many. Florets all tubular. Introduced from Europe.

29. ERECHTHITES.

Flower-heads cylindrical. Bracts narrow, mostly equal, but a few small ones at the base. Florets narrow, tubular. Pappus of numerous slender bristles. Herbs; flowers yellow, in terminal corymbs.

The genus is widely dispersed in the Southern Hemisphere. It is very close to *Senecio*.

Nearly or quite glabrous	1. *E. prenanthoides.*
Leaves coarsely toothed...	2. *E. arguta.*
Leaves linear, revolute	3. *E. quadridentata.*
Leaves narrow-oblong	4. *E. gunnii.*
Leaves linear, with few coarse teeth	5. *E. hispidula.*

1. E. PRENANTHOIDES, *D. C.* Erect, much-branched, glabrous or nearly so. Leaves broadly or narrowly lanceolate, 3-6 inches long, the margins finely and acutely toothed. Flowers very numerous. Bracts about 8 or 10, about 2 lines long.

Very common in shady, damp places; also South Australia, Victoria, New South Wales, and New Zealand. Fl. Jan.

> In some plants the outer pistillate flowers develop short straps.

2. E. ARGUTA, *D. C.* Erect, 1-2 feet, more or less woolly or scabrous, very variable. Leaves from linear to oblong, coarsely toothed, 1-2 inches long, often purple beneath. Flowers not very numerous, often broadest towards the base. Bracts about 12, usually 3 lines long, but in some specimens much shorter.

Very common; also throughout extra-tropical Australia and New Zealand. Fl. Nov.-Jan.

3. E. QUADRIDENTATA, *D. C.* Erect, branched, more or less clothed with delicate loose wool, 1-2 feet. Leaves mostly linear, with recurved margins, 1-3 inches long, sometimes flat. Flowers numerous, cylindrical. Bracts about 12, 3-4 lines long.

Very common, chiefly in dry places; also throughout extra-tropical Australia and New Zealand. Fl. Nov.-Feb.

4. E. GUNNII, *H.* Erect, usually unbranched, 1-1½ foot, bearing loose wool on the surface. Leaves narrow-oblong, 2-3 inches long, the under surface purple. Flowers not numerous, narrow. Bracts about 15, purple, about 5 lines long.

Common on mountains; also in Victoria. Fl. Dec.-Jan.

5. E. HISPIDULA, *D. C.* Erect, usually simple, 1-2 feet, woolly, scabrous or nearly glabrous. Leaves linear, usually coarsely toothed, those of the stems with broad bases, 1½-3 inches. Flowers few, rather stout. Bracts 16-24, about 4 lines long.

Launceston, Circular Head, &c.; also extra-tropical Australia. Fl. Nov.-Jan.

30. CYMBONOTUS

Bracts unequal, herbaceous. Outer florets ligulate, inner ones tubular. Achenes broadly oblong, slightly bent, the inner surface nearly flat. Pappus none. Scale-like projections of the receptacle developed amongst the florets.

Limited to the single Australian species. Allied to the *Calendulas* of South Africa.

C. LAWSONIANUS, *Gaud.* Tufted perennial, with a very short stem. Leaves in a rosette, obovate, usually coarsely toothed, 2-5 inches long, narrowed into a slender stalk, white beneath. Flowers few, solitary, on short stalks, pale yellow, ½-¾ inch diameter. Achenes brown, shining, about 1 line long.

Mount Direction, Richmond Road. Common in central and northern parts; also throughout extra-tropical Australia. Fl. Oct.

31. MICROSERIS.

Inner bracts nearly equal, outer ones short. Receptacle without scales. Florets all strap-shaped. Achenes cylindrical, not beaked. Pappus of rather few scales, flattened below, tapering, and often plumose above.

A genus of two species. Besides the Australian plant, there is one in South America.

M. FORSTERI, *H.* A tufted herb, with an abbreviated stem. Leaves 4-10 inches long, linear to lanceolate, glabrous, usually bordered with few remote teeth or lobes. Flowers solitary, on long stalks, yellow, 1 inch diameter.

Very common in pastures; also throughout extra-tropical Australia and New Zealand. Fl. spring and summer.

Amongst the numerous Composite plants that have appeared as weeds, the following seem fairly disposed to establish themselves:

ERIGERON LINIFOLIUS, *Willd.* Erect, woody annual, 1-2 feet. Flowers numerous, terminal, without spreading rays. Leaves linear, revolute, woolly.

BELLIS PERENNIS, *Linn.* Tufted. Leaves radical, oblong, stalked. Flowers ¾ inch in diameter, solitary, on short slender stalks, with one row of ray-florets, white, tipped with purple. Pappus none.

XANTHIUM SPINOSUM, *Linn.* A sub-erect, much-branched, shrub-like annual. Leaves lanceolate or with few lobes, 3-6 inches long, with trifid spines at the base. Male flowers clustered in the terminal axils. Female flowers in the lower axils, armed with numerous hooked spines.

CHRYSANTHEMUM LEUCANTHEMUM, *Linn.* Erect, simple or nearly so, 1-2 feet. Flowers large, with numerous spreading white straps, solitary or with one below. Pappus none.

C. PARTHENIUM, *Pers.* Erect, branched. Flowers numerous, in a terminal panicle, about ½ inch, with white spreading rays. Achene with a minute cup-like pappus.

MATRICARIA DISCOIDEA, *D. C.* Erect, branched, 3-5 inches. Flowers numerous, terminal, conical, with numerous minute tubular florets. Pappus none.

ANTHEMIS NOBILIS, *Linn.* Procumbent. Leaves much divided, fragrant. Flowers ¾ inch, with white spreading rays. Central flowers tubular, yellow, each subtended by a scale.

ACHILLEA MILLEFOLIUM, *Linn.* Erect or depressed, 1-2 feet. Leaves very dissected. Flowers numerous, in terminal corymbs, small, purple to white, with spreading ray-florets. Pappus none.

TANACETUM VULGARE, *Linn.* Erect herb. Leaves much divided. Flowers numerous, in a terminal corymb. Florets all tubular, yellow, protruding from the involucre.

PODOTHECA ANGUSTIFOLIA, *Cass.* Tufted, decumbent or erect. Flower-head solitary, on a short or long bracteate stem. Involucre narrow, cylindrical, 1-1½ inch long. Bracts numerous, unequal. Florets tubular. Pappus of 4-6 flattened plumose bristles.

CRYPTOSTEMMA CALENDULACEA, *R. Br.* Tufted, stemless. Leaves in a rosette, obovate, usually segmented, 3-6 inches long, white beneath. Flowers solitary, on slender stalks, 1-1½ inch diameter. Ray-florets pale yellow, spreading, inner ones tubular, purple. Achenes woolly.

CALENDULA OFFICINALIS, *Linn.* Herb. Leaves obovate-spathulate, 3-6 inches long. Flowers solitary, deep yellow. Outer florets rayed, inner tubular, 1-1½ inch diameter. Achenes bent, rough.

C. ARVENSIS, *Linn.* Similar to the last, but smaller in all details.

RHAGADIOLUS HEDYPNOIS, *All.* Minute and erect or spreading to several inches. Leaves narrow, obovate, entire or toothed. Flowers 2-8 lines long, yellow. Bracts few, equal, curved and rigid when in fruit. Achenes slender, curved. Peduncle thickened below the involucre when in fruit.

In the following some or all of the leaves and bracts are spiney :—

CARDUUS PYCNOCEPHALUS, *Jacq.* Erect, slender, 1-4 feet, cottony. Leaves divided, wavy, very prickly, wings extending down the stem, 2-4 inches long. Flowers few, in terminal clusters, ¾-1 inch long.

CARDUUS (CNICUS) LANCEOLATUS, *Linn.* Erect, branched, 2-4 feet. Leaves divided, very prickly, not extending in broad wings down the stem. Flowers solitary, 1½-2 inches long. Bracts very pungent and somewhat spreading.

C. (CNICUS) PRATENSIS, *Huds.* Stem simple, 1-2 feet. Leaves white, narrow-oblong, toothed, 2-4 inches long. Flowers solitary, about ¾ inch long. Bracts acute, but not spiney.

C. (CNICUS) ARVENSIS, *Curt.* Stems spreading underground. Flowering-branches erect, 4-10 inches. Leaves divided, very crisp and prickly. Flowers many, terminal, about ¾ inch long. Males nearly globular, females oblong

C. (Silybum) marianum, *Linn.* Erect. 3-5 feet. Leaves lobed, shining, variegated with white veins, 6 inches to 1½ foot long. Flowers terminal, solitary. 2 inches long. Bracts with long spreading spines.

Centaurea calcitrapa, *Linn.* Erect, about 1 foot. Leaves 4-6 inches long, narrow, of many segments. Flowers terminal, sessile amongst the upper leaves, purple, about ½-¾ inch long. Bracts ending in stiff spreading spines, ¾-1 inch long.

C. melitensis, *Linn.* Erect, 6 inches to 1 foot, branched. Leaves oblong, 1-3 inches long. Flowers yellow, about ½ inch long, 1 or 2 together, terminal, sessile in the upper leaves. Bracts armed with acute branched spines.

The following plants are not spiney; the florets are all ligulate:—

Tragopogon porrifolium, *Linn.* Erect, 2-3 feet, pale green, glabrous. Leaves long, linear. Flower terminal, purple. Bracts exceeding the florets, 1 inch long.

Helminthia echioides, *Gært.* Erect or sub-erect, 1-2 feet, rough, with stiff hairs. Leaves lanceolate, toothed, rough. Flowers yellow, terminal, usually many together, ½ inch. Outer bracts leafy, united in an outer involucre.

Picris hieracoides, *Linn.* Erect, rough, with stiff hairs. Leaves oblong-lanceolate, 3-6 inches, obscurely toothed. Flowers few, terminal, yellow, ¾ inch diameter. Florets much exceeding the involucre. Achenes not beaked. Pappus of numerous white bristles, some of which at least are plumose. So freely dispersed as to appear indigenous.

Leontodon hirtus, *Linn.* Tufted, 3-6 inches. Leaves lanceolate, remotely toothed, 2-6 inches. Flowers solitary, ¾ inch diameter, on slender stalks, drooping when in bud. Florets exceeding the involucre, spreading. Achene tapering at the top, bearing a pappus of about a dozen feathery hairs. There are no scales amongst the florets.

Hypochæris glabra, *Linn.* Usually small, but sometimes 8 inches high, glabrous. Leaves oblong, obtusely toothed, ½-3 inches long. Flowers few, on branched stems, or solitary in dwarf specimens, ¼-½ inch long, yellow. Florets hardly exceeding the involucre. Achenes beaked, except the outer ones. Pappus of many feathery bristles, each flower subtended by a scale.

H. radicata, *Linn.* Coarser than the last, except in dwarf specimens, hispid. Flowers larger. Florets exceeding the involucre. Achenes all beaked.

Lactuca saligna, *Linn.* Erect, slender, sparely branched, 1-2 feet. Lower leaves broad and lobed, upper ones linear. Flowers numerous, yellow, cylindrical, ¼ inch long, nearly sessile, dispersed along the stem. Achene with a long slender beak. Pappus of numerous simple hairs.

Sonchus oleraceous, *Linn.* Erect, 1-2 feet, very succulent. Leaves oblong, usually divided deeply into few broad lobes, 6-8 inches long. Flowers many, in a terminal panicle, yellow, ½-1 inch diameter. Involucre with usually a broad base. Achenes flattened, not beaked. Pappus of very numerous simple hairs.

S. asper, *Hoff.* Similar to the last, only the leaves much more divided, and the divisions irregularly and acutely toothed. The coast form is more robust in all details, and its distribution about Recherche and South Cape may indicate that it is indigenous.

Taraxacum dens-leonis, *Desf.* Coarse, succulent, annual, hairless, stem abbreviated. Leaves spreading, narrow-obovate, usually much divided into regular (usually acute) lobes, 3-12 inches. Flowers, yellow, solitary, on an erect hollow stalk 1-1½ inch in diameter. Outer bracts recurved. Achenes tapering into a long slender beak. Pappus of numerous spreading simple bristles.

Crepis setosa, *Hall.* Erect, much-branched, 8 inches to 1 foot. Leaves oblong, simple or lobed, 2-3 inches. Flowers yellow, ¼ inch long, terminating the numerous branches. Achenes cylindrical, tapering above into a slender beak. Pappus of numerous white simple hairs.

Cichorium intybus, *Linn.* Erect, branched, glabrous, 1-3 feet. Leaves below oblong, deeply lobed, upper ones linear. Flowers blue, ¾ inch, numerous, axillary, dispersed along the stems. The florets spreading, and much exceeding the involucre. Achenes short, broad, crowned by a ring of minute erect scales.

Lapsana communis, *Linn.* Sub-erect, slender, much-branched. Leaves lobed, the terminal one very broad. Flowers numerous, terminating the branches, solitary, yellow, ¼ inch long. Involucre of 8 nearly equal bracts, besides a few small outer ones. Achenes slightly flattened, without any pappus.

Order XLI.—*STYLIDIACEÆ.*

Pistil of 2 intimately blended carpels. Ovarian cavities distinct or partially so, inferior. Fruit capsular, many-seeded. Sepals usually free, 5, sometimes 2-lipped. Corolla usually irregular, of 5 petals, united only at the base. Stamens 2, usually united with the style to form a column.

A small order, with its greatest development in Australia. A few species generally dispersed in the Pacific to South America, and on the other hand to tropical Asia.

One petal much altered.
  Altered petal much reduced, bearing a large gland ... 1. *Stylidium.*
  Altered petal not much reduced, erect and hooded ... 2. *Levenhookia.*
Petals equal or nearly so.
  Stamens combined with style ... ... 3. *Forstera.*
  Stamens free ... ... 4. *Donatia.*

1. STYLIDIUM.

Corolla irregular, one petal very short, reflexed, and developing a gland on the upper surface for the reception of the column, or ascending and nearly equal to the rest. Column elongated, irritable. Stigma pulvinate between the shrivelled anther-cells. Capsule 2-celled, but the dissepiment deficient in the upper portion.

A tolerably large and distinct genus, confined to Australian distribution, excepting two East Indian species.

Perennial. Flowering-stems 6-18 inches high ... 1. *S. graminifolium.*
Annual. Flowering-stems 1-4 inches. Leaves very small.
  Plant glandular, hairy. Leaves rosulate... ... 2. *S. perpusillum.*
  Plant glabrous. Leaves mostly scattered... ... 3. *S. despectum.*

1. S. graminifolium, *Swartz.* A tufted perennial. Leaves linear, grass-like, numerous at the base of the flowering-stem, mostly 4-6 inches long. Flowers

pink, rarely white, numerous, in an elongated spike, which together with the stalk often attain 18 inches, the calyces and stem covered with glandular pubescence. Calyx-lobes united in two obtuse lips. Corolla-lobes about 4-6 lines long, with a few linear papillose appendages at the base; labellum sharply recurved, about $1\frac{1}{2}$ line long, dagger-shaped, with a large glandular formation on the surface for reception of the column. *Candollea serrulata*, Lab.

Very common in all situations: also throughout Eastern and Southern Australia. Fl. spring and summer.

2. S. PERPUSILLUM, *Hook.* A small annual, usually under 2 inches, more or less glandular, pubescent. Leaves linear to obovate, in a rosette at the base of the stem, seldom more than 1 line long. Flowers small, few in a loose corymb or solitary. Calyx-lobes about 1 line long, oblong, 5 in number. Corolla-tube short; lobes nearly equal; labellum narrow, concave, ascending. Capsule nearly globular. *C. perpusilla*, F. v. M.

George Town; also in Victoria and West Australia. Fl. Nov.-Dec.

3. S. DESPECTUM, *R. Br.* A small erect annual, usually under 3 inches, and without the pubescence of the last. Leaves scattered, ovate to linear, about 1 line long. Flowers few, in a loose corymb. Calyx-lobes short, 5, but two of them partially united. Corolla very small. Capsule linear, 3 lines long. *C. despecta*, F. v. M.

George Town, Western Plains, Islands of Bass Straits. Fl. Nov.-Dec.

2. LEVENHOOKIA.

Corolla irregular, 4 lobes nearly equal, the other considerably altered, often hood-shaped over the column. Column short and erect. Ovary 1-celled, with the rudiment of a dissepiment. Capsule globular, crowned by the persistent calyx-lobes. Seeds few.

A small Australian genus, closely allied to *Stylidium*, from which it differs principally in the column being fixed and erect, and the labellum being irritable.

L. DUBIA, *Sond.* A simple or branched pubescent annual, seldom exceeding 2 inches. Leaves oblong, narrowed into a stalk below, 2-3 lines long. Flowers many, racemed on the stems, each flower subtended by a leaf-like bract. Calyx about 1 line long, 5-lobed. Corolla-tube about as long as the calyx. Lobes about the same length, very obtuse. Labellum scarcely exceeding the column.

Brighton, Mount Field; Bass Straits; also throughout Southern Australia. Fl. Dec.-Jan.

3. FORSTERA.

Corolla nearly regular, with 5 nearly equal lobes. Column erect. Stigma 2-lobed. Ovary 1-celled, but with a partial dissepiment towards the base.

The genus is closely allied to *Campanulaceæ*, but has the column of *Stylidieæ*. It consists of few species, found principally in New Zealand and the extreme south of South America.

F. BELLIDIFOLIA, *Hook.* A small densely-tufted perennial. Leaves numerous, in a radical rosette, oblong to spathulate, $\frac{1}{4}$-$\frac{1}{2}$ inch long. Stems slender, 3-4 inches long, bearing usually 2 very small linear bracts in the upper half. Flower usually solitary. Calyx-lobes 5, obtuse. Corolla-tube about 1 line long. The lobes about the same length, obovate. Anthers and stigma not usually attaining maturity on the same plant. Capsule irregularly ovoid, about 3 lines long.

Western mountains, Mount Dundas, Adamson Peak, La Perouse, &c. Fl. Dec.-Jan.

4. DONATIA.

Calyx-lobes 4 or 5. Petals of the same number, inserted round a broad flat disk. Stamens 2 or 3, inserted on or within the disk. Ovary inferior, 2 or 3-celled, with several ovules in each. Styles short and thick, united at the base.

A genus of small tufted plants, containing but few species. The characters are tolerably distinct from any particular order, approaching in many details most nearly the *Saxifrages*, but the fruit is that of *Stylidiums*; and although the stamens do not combine with the style, they are inserted close to its base.

D. NOVÆ-ZEALANDIÆ, *Hook.* A small densely-tufted perennial, with an almost moss-like appearance. Leaves linear, about 2 lines long, very crowded along the stems. Flowers solitary, sessile, terminal. Calyx-lobes 5, linear. Petals 5, white, ovate, about 2 lines long. Stamens 2, inserted near the centre of the disk, close to the base of the style, and almost cohering with it. Ovules about 12 in each cell, in a dense tuft, pendulous from the top. Fruit a capsule, about 2 lines long, dehiscing transversely.

Summit of many mountains; Mt. La Perouse, Mt. Olympus, &c.; also an alpine New Zealand plant. Fl. Dec.-Feb.

ORDER XLII. *GOODENOVIACEÆ.*

Floral-tube adnate to the ovary, in rare instances free. Sepals 5, sometimes reduced or obsolete. Corolla irregular, but sometimes appearing almost regular. The free portion of the petals usually lanceolate, but in most instances developing marginal expansions or wings. Stamens 5, inserted at the base of the corolla. Anthers usually free, but in *Dampiera* and *Brunonia* united in a sheath round the style. Ovary more or less combined with the tube in most Tasmanian plants, imperfectly 2-celled in most genera, 1-celled in *Dampiera* and *Brunonia*. Ovules 1-2 or many. Style simple. Stigma cup-shaped or in a linear, more or less curved, groove, protected by hirsute lips till mature. Fruit drupaceous or capsular.

The order is almost exclusively Australian, few species, of but 2 genera, occurring beyond that distribution. The stamens as a rule attain maturity almost before the flower opens, and the stigma does not advance to the mouth of the indusium till long after.

Flowers yellow.
  Calyx not combined with the ovary ... ... 1. *Velleya.*
  Calyx more or less combined with the wall of the ovary ... ... 2. *Goodenia.*
Flower blue, white, or redish.
    Flowers in a globose dense head ... ... 6. *Brunonia.*
    Flowers loose. Stem angular ... ... 5. *Dampiera.*
  Ovules several. Plant glabrous, procumbent. Petals not winged ... ... 3. *Selliera.*
  Ovules 1 or 2 in ovary.
    Corolla with 2 upper and 3 lower lobes ... ... 2. *Goodenia.*
    Corolla very oblique, with digitately spreading lobes ... ... 4. *Scævola.*

1. VELLEYA.

Calyx free, of 3 or 5, usually free, sepals. Corolla united with the ovary at the base. Stamens free. Ovary imperfectly 2-celled, with many ovules in each. Indusium usually deeply curved. Seeds flat, with a more or less winged margin.

Confined to Australian distribution. Closely related to *Goodenia*.

Sepals 5. Corolla spurred. Flower-stalk tall ... 1. *V. paradoxa.*
Sepals 3. Flower-stalk short ... ... 2. *V. montana.*

1. V. PARADOXA, *R. Br.* Perennial. Leaves radical, mostly 2-4 inches long, oblong, and narrowed below into a stalk, margin entire or coarsely toothed. Flowers few or many, in a loose cyme on a common stalk. Sepals narrow, about $\frac{1}{2}$ inch long. Corolla yellow, large, and spreading, with a spur of irregular length. Indusium deeply horseshoe-shaped.

Common in many parts, chiefly dry pastures. Throughout extra-tropical Australia. Fl. Nov.-Dec.

2. V. MONTANA, *Hook.* A much smaller plant than the preceding. Leaves radical, 1-2 inches long, somewhat spathulate. Flowers on a short stalk, not exceeding the leaves. Sepals 3, narrow, about $\frac{1}{4}$ inch long. Corolla yellowish, $\frac{1}{4}$-$\frac{1}{2}$ inch long, lobes short and nearly equal. Capsule small, nearly globular. Seeds thickened on the border, but hardly winged.

On many mountains, principally in central and northern districts. It also occurs in Victoria and New South Wales. Fl. Dec.-Jan.

2. GOODENIA.

Calyx-tube connate, at least in the lower part, with the wall of the ovary. Lobes 5. Corolla-tube slit to the base above. Lobes usually oblique, but the two upper ones often curved back, or the flower nearly regular. Stamens 5, free. Ovary 2-celled, but the dissepiment more or less deficient above. Ovules solitary to many in each cell. Fruit a capsule. Seeds when numerous disk-shaped, and often winged.

A purely Australian genus.

Shrubs or erect perennials.
Flowers yellow. Seeds many. Leaves broad, denticulate.
Shrub. Leaves stalked. Calyx-lobes long, linear ... ... 1. *G. ovata.*
Perennial or shrubby. Leaves stem-clasping. Calyx-lobes short ... . 2. *G. amplexans.*
Flowers blue. Seeds 2. Leaves with revolute margins ... ... 3. *G. barbata.*
Tufted or trailing herbs. Flowers yellow or white.
Flowers solitary. Stem elongated.
Flower-stalk with 2 linear bracts ... ... 4. *G. geniculata.*
Flower-stalk without bracts ... ... 5. *G. elongata.*
Flowers not solitary. Plant tufted. Leaves linear ... ... 6. *G. humilis.*

1. G. OVATA, *Sm.* An erect, spreading, much-branched shrub, 2-5 feet high. Leaves stalked, narrowly or broadly ovate, denticulate on the margin, 1-2 inches long. Flowers few or many together, on slender stalks in the upper leaf axils. Calyx-tube long, linear, and combined with the ovary throughout its length. Lobes about as long as the tube, narrow-linear. Corolla yellow, about $\frac{1}{4}$ inch long. Capsule narrow. Seeds flat, numerous.

Very common; also throughout Eastern and Southern Australia. Fl. spring and summer.

2. G. AMPLEXANS, *F. v. M.* An erect perennial or under-shrub. Leaves with broad stem-clasping bases, narrow-ovate, about 2 inches long, denticulate on the margin. Flowers solitary or few together, on very short stalks in the upper

axils. Calyx-tube narrow-oblong. Lobes narrow, shorter than the tube. Corolla yellow, about ¾ inch long. Capsule ovoid. Seeds oval, flat, numerous.

Nile River. It occurs also in Victoria and South Australia. Fl. Nov.-Jan.

3. G. BARBATA, *R. Br.* An erect perennial or under-shrub. Leaves lanceolate, blunt, margins entire or slightly toothed, revolute, mostly under 1 inch long. Flowers stalked, solitary in the upper axils. Calyx-tube short. Lobes linear, about ¼ inch long. Corolla blue, ¾ inch long, pubescent outside, and 5 lines of cilia descending from the margins on the inside of the tube. Ovary imperfectly 2-celled, with a single erect ovule in each. Capsule ovate. Seeds 2, oblong.

Recorded from district of River Tamar, but doubtful. It occurs in New South Wales. Fl.

4. G. GENICULATA, *R. Br.* Perennial, in the typical form of a tufted habit. Leaves chiefly radical, linear to oblong, narrowed below into a stalk, margin remotely and obtusely toothed or entire, from 1-3 inches long; stem-leaves broader, shorter, and less stalked. Flowers solitary, on long slender stems, with a pair of linear bracts about half-way. Calx-tube short, adnate to the ovary throughout its length, lobes longer, broadly lanceolate. Corolla yellow, lobes broadly winged, about ¾ inch long. Capsule ovoid, about ¼ inch long, imperfectly 2-celled. Seeds broad, flat, about 8 in each cell.

Found throughout temperate Australia. Fl. spring and summer.

The Tasmanian form is almost invariably a creeping, spreading form.

Var. *lanata.* Stems creeping, spreading, rooting at the nodes. Leaves obovate and deeply toothed. *G. hederacea*, Hook.

5. G. ELONGATA, *Lab.* A perennial, with a tufted or creeping stock and slender sub-erect stems. Radical leaves, obovate to spathulate, narrowed below into long stalks, margin entire or obscurely toothed, mostly 1-2 inches long; stem-leaves narrower and sessile. Flowers solitary, on long slender stalks, but without the bracts of the last species. Calyx-tube about 2 lines long, the lobes lanceolate, and about as long as the tube. Corolla yellow, about ¾ inch long. Capsule ovoid, ¼ inch long, imperfectly 2-celled, with 4-6 seeds in each. Seeds without the prominent border, and with more convex sides than in the other species.

Common in marshy places; also in Victoria. Fl. Nov.-Jan.

6. G. HUMILIS, *R. Br.* A small tufted perennial. Leaves all radical, linear-lanceolate, entire, somewhat acute above and narrowed into a stalk below, from ½-2 inches long. Flowers in an irregular panicle, seldom longer than the leaves, the stem bearing a few leaf-like bracts. Calyx-tube about 2 lines long, the lobes same length, lanceolate. Corolla yellow, about ½ inch long. Capsule about 2 lines long, the dissepiment between the two cells nearly complete. Seeds small, flat, and numerous.

In marshy places in the northern, north-eastern, central, and western parts of the Island; also in Victoria, South Australia, and New South Wales. Fl. Jan.-Mar.

3 SELLIERA.

Calyx-tube connate with the wall of the ovary, limb of 5 free lobes. Corolla tube slit above to the base, limb of 5 nearly equal lobes and oblique. Stamens free. Fruit a succulent indehiscent capsule. Seeds numerous, somewhat flat.

The genus contains but 2 species. The Tasmanian plant extends to New Zealand and South America.

S. RADICANS, *Cav.* A prostrate creeping perennial, rooting at the nodes, quite glabrous. Leaves thick, fleshy, ovate to lanceolate, entire, blunt, and narrowed into a stalk below, 1-4 inches long. Flowers stalked, solitary, axillary. Corolla digitate, about 4 lines long. The lobes not winged, white on the upper surface, dark red-brown on the lower. Capsule oblong, imperfectly 2-celled. Seeds compressed, almost winged.

Very common in saline marshes. It occurs also in Victoria, South Australia, and New South Wales. Fl. spring and summer.

4. SCÆVOLA.

Calyx-tube connate with the wall of the ovary, limb small and sometimes not lobed. Corolla-tube slit to the base above, the lobes nearly equal, digitately spreading. Stamens free. Ovary 2-celled, with 1 erect ovule in each, sometimes the dissepiment abortive, and then occasionally only 1 ovule developed. Fruit a succulent indehiscent capsule, with a hard rugose endocarp, or sometimes the exocarp thin.

A rather large genus, principally Australian and South Pacific, but two species are widely distributed throughout the world.

Plant creeping. Flowers solitary, white ...	1. *S. hookeri.*
Plant decumbent to erect. Flowers blue.	
Style with conspicuous tufts of hairs below indusium	2. *S. æmula.*
Corolla-lobes fringed towards the base	3. *S. microcarpa.*

1. S. HOOKERI, *F. v. M.* A creeping much-spreading perennial, rooting at the nodes, hairy in the typical plant. Leaves oblong to spathulate, usually with few bold dentations, stalked, and usually from ½-1 inch long. Flowers stalked, solitary, axillary. Bracts oblong, close to the flower. Calyx-lobes not usually apparent. Corolla white above, deep red-brown below, about 4 lines long, the lobes slightly winged. Ovary 2-celled. Fruit ovoid, slightly rugose, 1½ line long.

Alpine, but also tolerably common on damp heaths, especially near salt marshes. Often overlooked from its resemblance, when in flower, to *Selliera radicans.* It occurs also in New South Wales and Victoria. Fl. Dec.-Mar.

2. S. ÆMULA, *R. Br.* Spreading or sub-erect, usually 1-1½ foot high. Lower leaves stalked, obovate, coarsely toothed, often about 2 inches long, the upper ones narrower, smaller, and sessile. Flowers in an elongating, interrupted spike, each one subtended by a leaf-like bract. Calyx-lobes short, triangular. Corolla very oblique, digitate, ¾-1 inch long, the lobes blue, the throat yellow. Ovary 2-celled. Style slender, with a tuft of rigid hairs developed close at the base of the indusium.

Swanport. Almost throughout extra-tropical Australia. Fl. Nov.-Dec.

3. S. MICROCARPA, *Cav.* A plant of very similar habit and appearance to the last, but less robust. Lower leaves stalked, more or less obovate, toothed, 1-1½ inch long; the stem-leaves simpler. Spike similar. Bracts linear. Calyx-lobes small, ovate. Corolla blue and white, very oblique, the lobes fringed towards the base. Ovary 1-celled, with 2 ovules. Style hairy, but without the characteristic tuft of the last species. Fruit small, usually 1-seeded.

Islands of Bass Straits. Throughout South-Eastern Australia. Fl. Nov.-Jan.

5. DAMPIERA.

Calyx-tube connate with the wall of the ovary, lobes short or obsolete. Corolla-tube deeply slit on the upper side, but not to the base, the entire portion of the tube persistent after flowering the lobes winged, the two upper ones erect, and developing each an auricular appendage that overarches the style. Anthers cohering in a tube round the style. Ovary usually 1-celled, with 1 erect ovule. Fruit small and indehiscent.

A purely Australian genus, containing about 35 species, only one of which is found in Tasmania.

D. STRICTA, *R. Br.* A rigid, erect, usually simple perennial, 1-1½ foot high, but occasionally decumbent. Stems angular. Leaves oblong to linear, entire or obscurely toothed, sessile, mostly ½-1 inch long. Flowers in small irregular spikes in the axils, rarely solitary, densely covered on the outer surface with rusty tomentum. Corolla blue or white, usually about ½ inch long.

Common in the northern and eastern parts of the Island; also throughout Eastern Australia. Fl. Nov.-Jan.

6. BRUNONIA.

Calyx-tube not connate with the ovary, but enclosing it. Corolla nearly regular, the two upper lobes with a deeper division between them than the other. Anthers cohering in a tube round the style. Ovary 1-celled, with a single erect ovule. Fruit dry, indehiscent, enclosed in the persistent calyx-tube.

A purely Australian genus, consisting of but one species. Authorities are not unanimous with regard to its immediate affinity, and it is often made a separate order.

B. AUSTRALIS, *Sm.* A tufted perennial. Leaves radical, obovate to spathulate, entire, pointed above, narrowed into a stalk below, from 1-3 inches long. Flowering-stalk slender, often 1 foot high. Flowers numerous, sessile, in a dense globular head, each flower subtended by bracts, the outer bracts appearing as an involucre. Calyx-tube short, the lobes ½-2 lines long, pubescent. Corolla blue. Fruit small.

Near Launceston, Westbury, and many localities in the northern part of the Island. It occurs almost throughout Australia. Fl. Nov.-Jan.

ORDER XLIII.—*CAMPANULACEÆ.*

Floral-tube connate with the wall of the ovary. Sepals usually 5, sometimes 3-10. Corolla regular or irregular, the lobes similar in number to the calyx. Stamens of a similar number. Anthers, free or united in a tube round the style. Ovary partially or entirely inferior, 2 or more celled, with numerous ovules in each. Style simple, the stigma entire or divided into as many lobes as there are cells in the ovary. Fruit capsular or rarely succulent and indehiscent. Seeds numerous, small.

A very large order, of world-wide distribution, the two natural groups often treated as distinct orders.

Corolla distinctly irregular, or at least more deeply divided between the 2 upper lobes.
  Corolla-tube slit to the base ... ... 1. *Lobelia.*
  Corolla-tube only partially slit ... ... 2. *Isotoma.*
Corolla regular, campanulate ... ... 3. *Wahlenbergia.*

1. LOBELIA.

Calyx-lobes 5. Corolla-tube slit to the base above, lobes 5, the two upper ones often shorter than the others and curved upwards, the three lower ones forming a spreading lip, or the lobes nearly equal, oblique, and digitately spreading. Stamens free below, the upper portion of the filaments and the anthers united in a tube round the style. Ovary 2-celled. Fruit capsular and opening by two valves above, or succulent and indehiscent.

The genus is very large and widely spread, and is often divided into two genera from the character of the fruit; those with a succulent indehiscent fruit being formed into a genus by themselves—*Pratia.* The division is not generally adopted, and would be the reverse of useful in a Tasmanian flora. In many of the procumbent species the flowers do not develop both perfect stamens and pistil.

Erect or ascending.
  Corolla ½ inch long. Ovary swollen above. Stems erect.
    Stem simple or nearly so. Leaves mostly linear — 1. *L. gibbosa.*
    Much-branched at base. Lower leaves broad, coarsely toothed .. — 2. *L. rhombifolia.*
Sub-erect or ascending. Stems angular.
  Corolla about ¼ inch long .. — 3. *L. anceps.*
Prostate, creeping, and often matted.
  Glabrous.
    Leaves broad, ½-1 inch long. Corolla 3-4 lines long ... ... — 4. *L. surrepens.*
    Leaves ovate to linear, 1-2 lines diameter. Corolla 2 lines long ... — 6 *L. irrigua.*
    Leaves obovate to linear, ¼-1 inch long. Corolla about 1 line long — 7. *L. platycalyx.*
  More or less pubescent. Corolla 3-4 lines long.
    Leaves oblong or lanceolate, ¼-½ inch long, sessile, but narrowed at base ... ... — 5. *L. pratioides.*
    Leaves ovate or orbicular, ¼-⅓ inch long. Broad at base or shortly stalked . — 8. *L. pedunculata.*

1. L. GIBBOSA, *Lab.* Annual, erect, stems simple or with few flowering branches when luxuriant, 6-18 inches high. Leaves mostly linear, but sometimes the lower ones broader with few obscure teeth. Flowers in a one-sided raceme, deep-blue or purple tinged with pink. Ovary swollen above. Sepals short, lanceolate. Corolla usually about ½ inch long, the two upper lobes small, recurved, almost linear, the three lower ones more united, extended forwards, oblong. Capsule ¼-½ inch long. Seeds very numerous, variable in size, and more or less 3-angled.

Very common. Found throughout Australia. Fl. Dec.-Feb.

> Von Mueller considers *L. gibbosa*, as adopted in Hook. "Fl. Tas." and Benth. "Fl. Aust.," to include three distinct species:—
>
> L. SIMPLICAULIS. Less robust than the type. Lobes of corolla all acute. Fruit less-bulging above. Seeds larger than in the type, ovate, triangular.
>
> L. BROWNIANA. Leaves linear. Corolla-lobes acute. Fruit much-bulging above. Seeds very minute, almost dust-like.
>
> L. MICROSPERMA. The typical form. Habit more robust and fleshy. Leaves broader. Corolla-lobes obtuse. Capsule much swollen above. Seeds very numerous, minute, and dust-like.

2. L. RHOMBIFOLIA, *De Vr.* An annual, usually with many erect branches arising from the root-stock, 4 inches to 1 foot high. Leaves at the base broad and deeply dentate, ½-1 inch long; stem-leaves narrower. Flowers few on each stem, each on a long slender stalk. Ovary short. Sepals rather longer, lanceolate. Corolla about ¼ inch long, deep blue or purple, the upper lobes small and recurved, the lower lobes extending forwards. Capsule swollen above. Seeds small, numerous, and smooth.

Near George's Bay. It also occurs in Victoria, South Australia, and West Australia. Fl. spring.

3. L. ANCEPS, *D. C.* A decumbent or sub-erect perennial. Stems angled, a few inches to 1 foot high. Leaves lanceolate to linear, ½-2 inches long, obscurely

toothed, or entire. Flowers small, stalked, in the terminal axils. Calyx-tube narrow. Lobes short and lanceolate. Corolla pale blue, 2-2½ lines long, two upper lobes small and recurved, three lower ones extending forwards. Capsule oblong, linear.

Common in saline marshy places. It occurs almost throughout Australia, and extends to New Zealand, South America, and South Africa. Fl. spring and summer.

4. L. SURREPENS, *Hook.* A small glabrous perennial, the stem creeping and never exceeding a few inches. Leaves obovate, obtuse, usually entire, ½-1 inch long. Flowers on axillary stalks, usually shorter than the leaves Calyx-lobes short and broad. Corolla blue or nearly white, 3-4 lines long. The lobes spreading forwards and nearly equal. Anthers not clothed with hairs, except 1 or 2 flat bristles tipping the lower ones.

It occurs sparingly in many alpine marshy situations. Western mountains. Fl. Jan.-Feb.

5. L. PRATIOIDES, *Benth.* A small, creeping, more or less pubescent perennial. Leaves linear to ovate, narrowed at the base, ¼-½ inch long, obscurely toothed, rarely entire. Flowers usually diœcious, stalked. Ovary very short in staminate flowers. Corolla blue, about 4 lines long. Lobes nearly equal, oblique. Anthers glabrous, except a tuft of short bristles occasionally tipping the lower ones.

Near Perth, Spring Bay, Hamilton, &c. Found also in Victoria, South Australia, and New South Wales. Fl. Nov. Jan.

6. L. IRRIGUA, *R. Br.* A small, creeping, glabrous, usually matted perennial. Leaves ovate to nearly linear, mostly entire, 1-2 lines diameter. Flowers very small, axillary. Calyx-lobes lanceolate. Corolla white or pale blue, about 2 lines long. The lobes nearly equal. Capsule about 1½ line diameter, fleshy, indehiscent. Seeds globular, smooth. *Pratia irrigua*, Benth.

Bass Straits. Fl.

7. L. PLATYCALYX, *F. v. M.* A small, creeping, glabrous perennial, the stems ascending in favourable situations. Leaves linear to obovate, thick, mostly ¼-¾ inch long. Flowers very small, axillary. Calyx-lobes short and broad. Corolla about 1 line long, white. Lobes oblique, nearly equal. Fruit ovoid, somewhat flattened, fleshy, indehiscent. Seeds ovate, compressed. *Pratia platycalyx*, Benth.

Macquarie Harbour, Bellerive, swamps near Mount Dromedary. Probably common in saline marshes, but overlooked. It occurs also in Victoria and South Australia. Fl. throughout the spring and early summer.

8. L. PEDUNCULATA, *R. Br.* A very variable, creeping, slightly pubescent perennial, resembling in habit *L. pratioides* on the one side and *Isotoma fluviatilis* on the other. Leaves usually ovate, sessile or shortly stalked, broad at the base, from 2 lines long and apparently distichous to ¾ inch long and obscurely toothed. Flowers on slender stalks, usually but not always much longer than the leaves. Calyx-lobes lanceolate. Corolla pale blue, 2-4 lines long. Lobes oblique and nearly equal. Fruit fleshy, globular, indehiscent. *Pratia pedunculata*, Benth.

Common in many parts; also in New South Wales, Victoria, South Australia, and Queensland. Fl. Nov.-Dec.

2. ISOTOMA.

Calyx and fruit the same as in *Lobelia.* Corolla-tube entire or but shortly slit between the upper lobes. Stamens inserted into the upper portion of the corolla-tube, but the anthers connate as in *Lobelia.*

A small genus, only differing from *Lobelia* in the entire corolla-tube and the stamens being inserted into the summit of the tube instead of at its base. The distinction is of doubtful value, and is not maintained in Hook. "Fl. Tas."

I. FLUVIATILIS, *F. v. M.* A prostrate creeping perennial, usually somewhat pubescent, and much resembling some forms of *Lobelia pedunculata*. Leaves ovate to almost linear, sessile or shortly stalked, obscurely toothed, 3-6 lines long. Flowers solitary, axillary, on more or less elongated stalks. Calyx-lobes short, lanceolate. Corolla usually 4-6 lines long, blue and white, tube much exceeding the calyx. Lobes oblique, nearly equal, about as long as the tube, narrow-oblong. Seeds ovoid, smooth. *Lobelia fluviatilis*, Hook.

Various parts in the north: Clydevale, near Campbell Town, Jordan River; also in New South Wales, Victoria, South Australia, and Queensland. Fl. Dec.-Jan.

3. WAHLENBERGIA.

Calyx normally 5 or 4-lobed. Corolla regular, campanulate, tubular at the base, lobed above. Stamens free. Ovary usually 3-5-celled, rarely 2-celled. Fruit capsular, opening by terminal slits.

A large genus, of wide distribution, principally developed in South Africa. The Australian region possesses but two species—one confined to a very constricted distribution in Tasmania and New Zealand; the other is common to the East Indies and tropical Asia, besides Australia and New Zealand.

Leaves scattered	1. *W. gracilis.*
Leaves confined to base of stem ...	2. *W. saxicola.*

1. W. GRACILIS, *D. C.* Extremely variable in size and habit, pubescent or glabrous. The whole plant sometimes not 2 inches high (with a flower about 1 line long) to much elongated, erect or decumbent, 1½-2 feet long, with flowers exceeding 1 inch. Leaves obovate to linear, obscurely dentate in fairly-grown plants, usually ½-1 inch long. Flowers solitary, on long terminal stalks. Corolla blue, or rarely white, broadly campanulate. Ovary normally 3-celled.

Very common. Common also throughout Australia. Fl. spring and summer.

2. W. SAXICOLA, *D. C.* A tufted or creeping perennial, rarely with short leafy branches. Leaves in a rosette at the base of the stem or crowded on the short branches, obovate to linear, ½-1 inch long. Flower solitary, on a leafless stem, 2-6 inches high, not differing in detail from *W. gracilis.* Ovary 2 or 3-celled. *W. gracilis*, (partly) F. v. M.

Summit of Mount Wellington. Fl. Dec.-Jan.

ORDER XLIV. *ERICACEÆ*.

Calyx inserted below the ovary, tubular at the base, but deeply divided into 5 segments. Corolla inferior, tubular, with 5 short spreading lobes. Stamens 10, inserted at the base of the corolla. Anthers 2-celled, usually with 2 or 4 awns, opening by terminal pores or slits. Ovary 5-celled, with many ovules in each. Placentas axillary. Fruit capsular. Seeds minute.

A very considerable order, distributed almost throughout the world, but very poorly represented in Australian regions. The forms are very varied, but in the definition of the order I have confined myself to details referring to Australian forms.

Anthers without awns. Fruit fleshy	1. *Pernettya.*
Anthers with 4 awns. Fruit a dry capsule surrounded by succulent calyx	2. *Gaultheria.*

1. PERNETTYA.

Corolla urceolate, with small spreading lobes. Anthers without awns in the Tasmanian species, but usually 2 to each anther-cell. Style inserted in a central depression. Stigma capitate. Fruit a globular, indehiscent, succulent capsule or berry.

An alpine genus, of wide distribution in the Southern Hemisphere.

P. TASMANICA, *Hook.* A small, creeping, usually densely matted plant, the branches sometimes ascending for a few inches. Leaves nearly sessile, oblong to lanceolate, concave, usually obscurely toothed, 1-3 lines long. Flowers shortly stalked, solitary in the upper axils. Calyx-segments about 1 line long. Corolla about 2 lines long. Filaments dilated at the base. Anthers unawned, and the terminal pore extending nearly to the base. Berry red or yellow, 3-4 lines diameter.

On many mountain-tops and in the Lake District; also in New Zealand. Fl. Dec.-Jan.

2. GAULTHERIA.

Calyx persistent, enlarging and becoming fleshy after flowering, and more or less covering the fruit. Corolla urceolate. Lobes short, spreading. Anthers tipped with 4 erect awns. Style inserted in a central depression. Stigma capitate. Fruit a dry capsule, but appearing berry-like from the succulent calyx; in some species, not Tasmanian, the persistent calyx reduced and the capsule succulent.

A small genus, but of very wide distribution, occurring in tropical Asia and Japan, throughout South and part of North America, Australia, and the Southern Pacific.

Leaves 1-2 inches long. Flowers in small dense racemes. Fruiting-calyx white	1. *G. hispida.*
Leaves $\frac{1}{2}$-1 inch long. Flowers solitary, in terminal axils. Fruiting-calyx red	2. *G. lanceolata.*
Leaves 3-4 lines long. Flowers solitary, in terminal axils. Fruiting-calyx red	3. *G. antipoda.*

1. G. HISPIDA, *R. Br.* An erect spreading shrub, 2-6 feet high, the branches and midribs of the leaves covered with coarse brown hairs. Leaves shortly stalked, lanceolate to oblong, obscurely toothed, mostly 1-2 inches long. Flowers in small, dense, terminal racemes, each flower subtended by a short broad bract. Calyx about 1 line long. Corolla about 2 lines long. Fruiting-calyx white and succulent, completely surrounding the capsule, about 4 lines diameter.

Very common in mountainous districts. It occurs also in New South Wales and Victoria. Fl. Nov.-Dec.

2. G. LANCEOLATA, *Hook.* A small, sub-erect, spreading bush, the branches roughly hispid. Leaves oblong to lanceolate, obscurely toothed, $\frac{1}{2}$-1 inch long. Flowers solitary in the upper axils, on short stalks, carrying many small bracts, forming together short, terminal, leafy racemes. Calyx about 1 line long. Corolla urceolate, about 2 lines long. Stigma 5-lobed. Fruiting-calyx red, seldom completely enclosing the capsule.

Ben Lomond, western mountains. Fl. Dec.-Jan.

3. G. ANTIPODA, *Forst.* A very variable shrub, sub-erect or prostrate, more or less coarsely hispid. Leaves shortly stalked, ovate to orbicular (in specimens from New Zealand often nearly lanceolate), obscurely toothed, $\frac{1}{4}$-$\frac{1}{2}$ inch long. Flowers solitary, few together in the terminal axils, on short bract-bearing stalks. Calyx about 1 line long, lobes lanceolate. Corolla urceolate, about 2 lines long.

Fruiting-calyx red, and, in all I have examined, only about half-enclosing the capsule, which is somewhat fleshy.

Found on the summit of many mountains. It occurs in New Zealand. Fl. Dec.-Jan.

ORDER XLV.—*EPACRIDACEÆ.*

Calyx of 5, rarely 4, distinct sepals. Corolla of a similar number of petals, more or less united, regular. Stamens equal in number to the lobes of the corolla, not always perfect in flowers developing perfect ovules, inserted below the ovary or on the corolla-tube. Anthers 1-celled, opening by a single longitudinal slit, free, but in one genus often cohering in a ring round the style (*Sprengelia*). A disk usually developed between the stamens and pistil, sometimes of 5 free scales or the scales united, but not always reliable in form even in the same species. Ovary usually 5-celled, but varying from 1-10, either 1 pendulous ovule in each cell or many arising from an axile placenta. Style simple, and in all those with solitary ovules in the cells a simple continuation from the ovary, in the many ovuled species the style is sunk in a central depression. Stigma simple or slightly lobed. Fruit a more or less berry-like drupe in the solitary-ovuled, and capsular in the many-ovuled, tribe.

The genus, though very large, is almost confined to Australian, New Zealand, and corresponding Pacific and Antarctic distribution. It is closely allied to *Ericaceæ*, from which it is separated, however, by the unilocular development of the anthers.

> The order is naturally divided into 2 tribes The first, *Stypheliceæ*, containing a very large number of species, has not developed sufficiently clear dividing-lines amongst its varied forms to render generic divisions easy without having recourse to details of small genetic value. It would, perhaps, be more exact to follow von Mueller, and treat the large mass as members of one genus.

Tribe *Styphelieæ*. Ovary 1-10 celled, containing 1 ovule in each cell. Style enlarging at base, or abruptly ascending from ovary

- Flowers normally solitary in the leaf-axils.*
  - Corolla red or green, ½ inch long or more.
    - Lobes as long as tube, recurved ... ... 1. *Styphelia.*
    - Lobes shorter than tube ... . 2. *Astroloma.*
  - Corolla mostly white, ¼ inch or under.
    - Flower-stalk clothed with bracts.
      - Leaves pale beneath. Fruit very fleshy. Pyrenes combined ... ... 5. *Cyathodes.*
      - Leaves not pale beneath.
        - Leaves blunt. Fruit very fleshy. Pyrenes separate .. ... 3. *Pentachondra.*
        - Leaves sharply pointed. Fruit but slightly fleshy. Pyrenes combined . ... 8. *Leucopogon.*
    - Flower-stalk without bracts, except the 2 bracteoles†. . . .. 6. *Brachyloma.*
- Flowers normally clustered, racemed or spiked in the leaf-axils, rarely reduced to a single flower in a few axils.
  - Corolla-lobes densely bearded, white ... ... 8. *Leucopogon.*
  - Corolla green, lobes tipped with hairs ... 9. *Acrotriche.*

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* *Cyathodes adscendens* has commonly 2 or 3 flowers in the axils.

† The stalk of the bud may have bracts, however.

Corolla white, pink, or red, lobes slightly hairy or glabrous.
Leaves pale beneath. Fruit small, fleshy, 1-celled ... 10. *Monotoca.*
Leaves pale beneath. Fruit fleshy, pink or white, 5-celled. Pyrenes combined ... ... 7. *Lissanthe.*
Leaves green on both sides. Fruit large, fleshy, purple, 10-celled. Pyrenes separable ... ... 4. *Trochocarpa.*

Tribe *Epacreæ.* Ovary 5-celled, with numerous ovules. Style inserted in a shallow or deep depression in the ovary.

Leaves narrowed at the base or shortly stalked.
Flowers about 1 inch long, bright red. Plant climbing ... ... 13. *Prionotes.*
Flowers $\frac{1}{2}$ inch long or under.
Flower-stalk clothed with bracts ... ... 11. *Epacris.*
Flower-stalk nearly bare when mature .. ... 12. *Archeria.*
Leaves broad at base, sheathing the stem.
Petals combined in a deciduous hood .. ... 15. *Richea.*
Petals spreading.
Petals nearly free, stiff ... ... 14. *Sprengelia.*
Petals urceolate. Leaves under $\frac{1}{2}$ inch or exceeding 6 inches ... ... 16. *Dracophyllum.*

1. STYPHELIA.

Corolla-tube cylindrical. Lobes linear, bearded, and revolute. Stamens with filiform filaments and linear exserted anthers. Ovary 5-celled. Fruit but slightly fleshy.

The genus is confined to Australia, and originally included all genera now in the tribe *Stypheliea.*

S. ADSCENDENS, *R. Br.* A decumbent, much-branched, and spreading shrub. Leaves nearly sessile, ovate-lanceolate, with a sharp pungent point, $\frac{1}{2}$-$\frac{3}{4}$ inch long, margins minutely ciliate. Flowers solitary, axillary, on very short stalks clothed with bracts, the 2 bracteoles broad, about 2 lines long. Sepals oblong, about 4 lines long. Corolla pale green or yellow, nearly 1 inch long, the upper part of the throat and lobes densely hairy. Fruit ovoid, 5-ribbed, about 4 lines long.

Common in dry heathy situations. It occurs also in Victoria, South Australia, and New South Wales. Fl. Oct.-Jan.

2. ASTROLOMA.

Corolla-tube elongated, cylindrical or nearly so. Lobes narrow, usually bearded, only partially or not at all recurved. Stamens with short flattened filaments inserted at the throat of the corolla, and oblong anthers attached much above the middle. Ovary 5-celled. Style slender, elongated. Fruit somewhat fleshy or dry.

A purely Australian genus.

Flowers red. Leaves lanceolate, pointed ... ... 1. *A. humifusum.*
Flowers mostly green. Leaves filiform ... ... 2. *A. pinifolium.*

1. A. HUMIFUSUM, *R. Br.* A small, prostrate, much-branched shrub. Leaves narrow, mostly lanceolate, with a hard sharp point, slightly ciliate on the margin, 5 or 7-nerved, about $\frac{1}{2}$ inch long. Flowers solitary, axillary, nearly sessile. Bracts very small. Bracteoles about 1 line long, very broad, but with a short acute point. Sepals oblong, pointed, 2-3 lines long. Corolla-tube cylindrical, bright crimson, about $\frac{3}{4}$ inch long, with a ring of densely hairy scales towards the base. Lobes about 2 lines long, densely hairy above, erect, with

slightly spreading tips. Fruit about ½ inch diameter, fleshy, with a dense bony endocarp. *Styphelia humifusa*, F. v. M.

Very common, mostly in dry situations. Throughout extra-tropical Australia. Fl. Sept.-Mar.

2. A. PINIFOLIUM, *Benth.* Erect or spreading, much-branched, usually 1-2 feet high. Leaves very narrow, linear, crowded on the branches, ⅓-1 inch long, acutely pointed, with revolute margins, usually ciliate on the margin, and more or less scabrous, pubescent on the upper surface. Flowers solitary, axillary, nearly sessile, usually few together at the base of the branchlets. Bracts about 6, broad, gradually enlarging to the broad blunt bracteoles. Sepals similar to the bracteoles in character, but rather narrower and longer, about ¼ inch long. Corolla-tube cylindrical, red and green, slightly hairy within. Lobes linear-lanceolate, spreading, about 3 lines long, with a small tuft of hairs towards the tip. Fruit thinly fleshy mesocarp and a hard bony endocarp. *Styphelia pinifolia*, F. v. M.

In many parts on the north-eastern and southern parts, on or near the coast. It occurs also in New South Wales and Victoria. Fl. Sept.-April.

3. PENTACHONDRA.

Corolla-tube short, cylindrical. Lobes recurved or revolute, bearded inside. Filaments inserted into the top of the tube. Ovary 5-celled. Fruit berry-like, the hardened walls of the ovary cells free from one another, forming usually 5 free pyrenes.

A genus containing but three species, two are confined to Tasmania; the other occurs in Victoria and New Zealand. The inflorescence and habit are closely allied to *Styphelia*, and the fruit to *Trochocarpa*. *Leucopogon milligani* was till lately referred to this genus, pending the discovery of fruit.

Prostrate, densely matted. Leaves and flowers about 1½ line long	2. *P. pumila.*
Ascending. Leaves linear-lanceolate, 2 lines long. Flowers about 2 lines long	3. *P. ericæfolia.*
Ascending or sub-erect. Leaves broad to lanceolate. ¼-¾ inch long. Flowers about 4 lines long ...	1. *P. involucrata.*

1. P. INVOLUCRATA, *R. Br.* A small prostrate or sub-erect shrub, mostly 12-18 inches in growth. Leaves broadly elliptical to lanceolate, bluntly pointed, many-ribbed, villous on the margin, ¼-¾ inch long. Flowers solitary, axillary, shortly stalked, usually 2 or 3 together towards the end of the branchlets. Bracts several, small, the one below that subtending the flower having a rudiment of a flower in its axil. Bracteoles about ½ line long, broad, ciliate on the margin like the bracts and sepals. Sepals 1 line long. Corolla-tube short. Lobes about 4 lines long, densely bearded, and revolute. *Trochocarpa involucrata*, F. v. M.

Mount Wellington, Whale Head, Swanport, Schouten Island. Fl. Jan.-Feb.

2. P. PUMILA, *R. Br.* A small prostrate shrub, more or less matted and spreading. Leaves ovate, concave, 3 or 5-ribbed, bluntly pointed, and tapering below into a short stalk, green beneath, mostly about 1 line long. Flowers very shortly stalked, solitary, and terminal on short branchlets. Bracts many, very small, orbicular, the upper one with a minute rudiment in its axil. Bracteoles about half as long as the calyx. Sepals about ¾ line long. Corolla-tube about 2 lines long. Lobes hardly 1 line long, recurved, and densely bearded. Filaments very short. Anthers barely protruding from the tube. Fruit red, oblong, 2-3 lines long. The pyrenes quite free from one another. *Trochocarpa pumila*, F. v. M.

Very common on mountain summits. It occurs also in Victoria, New South Wales, and New Zealand. Fl. Nov.-Dec.

3. P. ERICÆFOLIA, *Hook.* A prostrate or ascending, much-branched shrub, its branches often extending to 2 feet or more. Leaves linear, lanceolate, concave, and often appressed to the branch, blunt, 1-3-ribbed, 2-3 lines long. Flowers shortly stalked, solitary, in the upper axils of the branches. Bracts orbicular, very small, the upper one containing a minute rudiment. Bracteoles oblong, about half as long as the calyx. Sepals about 1 line long. Corolla-tube about 2 lines long. Lobes shorter, reflexed, and densely-bearded. Filaments very short. Anthers barely protruding from the tube. *Stypheiia ericifolia.* F. v. M.

Near Lake St. Clair, Mt. Dromedary. Fl. Mar.

4. TROCHOCARPA.

Corolla-tube short, cylindrical or campanulate. Lobes short and recurved, smooth or loosely bearded. Filaments short, inserted into the top of the corolla-tube. Ovary 10-celled, with 1 ovule in each. Fruit a globose berry-like drupe, the mesocarp usually thick and pulpy. The pyrenes normally 10, and distinct or easily separable.

The genus is purely Australian, and of the six species of which it is composed three are confined to Tasmania. It is separated from *Pentachondra* and *Leucopogon* by unimportant characters only.

Leaves mostly 1-1½ line long. Flowers red, in dense nodding spikes ... ... 2. *T. thymifolia.*
Leaves mostly from ¼-¾ inch long.
  Leaves somewhat distichous. Flowers few or many, in short terminal spikes. Corolla-tube hairy at throat ... ... 1. *T. disticha.*
  Leaves scattered. Flowers few, in terminal or axillary, small, dense spikes, sometimes solitary. Corolla glabrous ... ... 3. *T. gunnii.*

1. T. DISTICHA, *Spreng.* A tall, often broadly-spreading, shrub. Leaves from broadly ovate and under ½ inch long to narrow-oblong and exceeding ¾ inch, mostly with 3 or 5 prominent veins below and reticulated above, shortly stalked, and arranged irregularly in 2 rows. Flowers red or white, in short, dense, terminal spikes. Bracts few, small, orbicular. Bracteoles about half as long as the calyx. Sepals about 1 line long, broad. Corolla-tube about 2 lines long. Lobes about half as long, recurved, usually quite glabrous, except towards the base, where they bear a dense tuft of white hairs that are reflected into the tube. Filaments more than half as long as the corolla-lobes. Fruit very fleshy, about ½ inch diameter, purple. The pyrenes quite distinct. *Decaspora disticha*, Hook.

Mt. Bischoff, West Coast, Southport, Huon, &c. Fl. Nov.-Jan.

> Var. *cunninghami.* Smaller, usually decumbent, and white-flowered. *D. cunninghami*, H.

2. T. THYMIFOLIA, *Spreng.* A small, spreading, sub-erect shrub. Leaves on recurved stalks nearly as long as the laminæ, ovate to cordate, thick, convex, 1-5-ribbed. Flowers red, many, in dense, terminal, nodding spikes. Bracts few, broad, small, sometimes none except the bracteoles. Sepals broad, ½-¾ line long. Corolla-tube about twice as long as the calyx. Lobes about 1 line long, bearded in the centre. Filaments about ½ line long, thick. Fruit about ½ inch diameter, pale purple, very fleshy. Pyrenes quite distinct. *Decaspora thymifolia*, Hook.

Western mountains, Mount Wellington. Fl Dec.-Jan.

3. T. GUNNII, *Benth.* A tall much-branched shrub. Leaves from ¼ inch long and broadly oblong to ¾ inch and narrow, shortly stalked, mostly 3 or 5-ribbed. Flowers white, few together, in small, dense, terminal or axillary spikes,

occasionally solitary. Bracts few, small, orbicular. Bracteoles slightly larger. Sepals broad, under 1 line. Corolla-tube about $1\frac{1}{2}$ line long. Lobes shorter than the tube, spreading, completely hairless. Filaments not quite as long as the corolla-lobes. Fruit fleshy, about $\frac{1}{3}$ inch diameter, purple to orange. Pyrenes quite distinct. *Decaspora gunnii*, Hook.

Mount Hartz, West Coast, Mount La Perouse, near Lake St. Clair, &c. Fl. Dec.-Jan.

5. CYATHODES.

Corolla-tube cylindrical, short, often hairy within, but without tufts of hairs or scales in a circle below the middle. Lobes spreading, often bearded. Filaments short, inserted into the top of the tube. Ovary 5-celled, except in *C. glauca*, where it is 8-10-celled. Fruit a berry-like drupe, the mesocarp very fleshy. Pyrenes combined in a central stone.

The genus is small, and extends from Eastern Australia to New Zealand and the adjacent portion of the Pacific. Of the eight Tasmanian species seven are endemic: the other, *C. acerosa*, is the only member of the genus extending to the Continent, where it is found in the south-eastern portion of Victoria. It also extends to New Zealand. The genus is connected with *Leucopogon* through *C. adscendens*.

Leaves mostly $1\text{-}1\frac{1}{2}$ inch long, narrow, and pointed.
Leaves clustered in false whorls ... ... 1. *C. glauca.*
Leaves mostly $\frac{1}{4}\text{-}\frac{1}{2}$ inch long, oblong, blunt.
Leaves clustered at ends of branches ... 2. *C. straminea.*
Leaves scattered on the branches ... .. 3. *C. adscendens.*
Leaves mostly $\frac{1}{3}\text{-}\frac{3}{4}$ inch long, lanceolate, with a hard but not pungent point.
Leaves 2 lines long, silvery-white beneath .. 4. *C. dealbata.*
Leaves 9 lines long, with a hard callous point ... 5. *C. abietina.*
Leaves mostly $\frac{1}{4}\text{-}\frac{1}{2}$ inch long, narrow-lanceolate, with a hard, very pungent point.
Corolla-lobes hairless or nearly so.
Leaves about $\frac{1}{3}$ inch long. Peduncles recurved 6. *C. acerosa.*
Leaves about $\frac{1}{4}$ inch long. Peduncles very short 8. *C. parvifolia.*
Corolla-lobes bearing many long hairs ... ... 7. *C. divaricata.*

1. C. GLAUCA, *Lab.* Generally a small shrub, but at times 30 or 40 feet high. Leaves usually in clusters or false whorls, narrow-oblong to nearly linear, convex, $\frac{3}{4}\text{-}1\frac{1}{2}$ inch long, many-ribbed. Flowers solitary, axillary, and clustered with the leaves at the ends of the branches, nearly sessile, the peduncle clothed with bracts. Sepals broadly ovate, 2 lines long. Corolla-tube about 3 lines long. Lobes narrow, about half as long as the tube, bearing a few long hairs on the upper surface. Filaments rather long for the genus. The anthers linear and freely protruding. Ovary 8-10-celled. Fruit flattened, very fleshy, red to purple or white, mostly about $\frac{1}{3}$ inch diameter. *Styphelia billardieri*, F. v. M.

Very common in hilly and mountainous situations. Fl. Dec.-Jan.

2. C. STRAMINEA, *R. Br.* A sub-erect, much-branched, spreading shrub. Leaves usually clustered towards the ends of the branches, oblong, flat or concave, glaucous beneath and many-ribbed, mostly $\frac{1}{4}\text{-}\frac{1}{2}$ inch long. Flowers solitary, clustered in the terminal leaf-axils, nearly sessile. Bracts few, rather large. Sepals about 2 lines long. Corolla-tube usually about 3 lines long. Lobes lanceolate, about 2 lines long, very hairy at the tip and the orifice of the tube, and slightly so along the centre. Filaments long and recurved. Anthers linear. Fruit red, very fleshy, about 3-5 lines diameter. *Styphelia straminea*, F. v. M.

Common on mountain summits. Fl. Dec.-Jan.

Var. *macrantha*. Intermediate between this and *C. glauca*. *C. macrantha*, H. Mount Olympus.

3. C. ADSCENDENS, *Hook.* A diffuse shrub, with ascending branches. Leaves scattered, oblong, shortly stalked, flat or concave, glaucous and many-ribbed beneath, mostly $\frac{1}{4}$ inch long. Flowers nearly sessile in the terminal axils, solitary, or 2 or 3 together in some axils. Bracts few, small, the upper one bearing the rudiment of a flower. Sepals rather more than 1 line long. Corolla-tube rather longer than the sepals, contracted at the throat. Lobes about $\frac{3}{4}$ line long, densely bearded. Filaments short. Anthers oblong, contained in the mouth of the tube. Fruit red, fleshy, about $\frac{1}{4}$ inch diameter. *Styphelia hookeri*, F. v. M.

Mount Wellington, Lake St. Clair, Western mountains. Fl. Dec.-Jan.

> The species approaches *Leucopogon* in the character of the stamens, corolla-lobes, and in the flowers not being truly solitary; but, considering the inessential nature of the definitions of this and neighbouring genera, its removal would be less justified than a condemnation of the genus.

> An erect rigid form on the West Coast mountains; approaches *C. abietina.*

4. C. DEALBATA, *R. Br.* A small, prostrate, much-branched shrub, somewhat resembling *Pentachondra pumila.* Leaves oblong to almost linear, with an obscure callous point, or the narrower ones with an elongated, usually deciduous, point, shortly stalked, about $2\frac{1}{2}$-3 lines long, 1-5-ribbed, and very white beneath. Flowers solitary, in the terminal axils. Bracts many, broad. Bracteoles half as long as the calyx. Sepals $1\frac{1}{2}$ line long. Corolla-tube 3 lines long, cylindrical. Lobes very short, densely bearded along the centre. Filaments short. Anthers not protruding beyond the mouth of the tube. Fruit red, fleshy, about $2\frac{1}{2}$ lines diameter. *Styphelia dealbata*, F. v. M.

Summit of Mount Wellington, Frenchman's Cap, Hartz, Ben Lomond, &c. Fl. Dec.-Jan.

> *C. pumila* of New Zealand appears to be identical with this species.

5. C. ABIETINA, *R. Br.* A rigid, erect, much-branched shrub, 2-4 feet high. Leaves shortly stalked, erect or recurved, lanceolate, mostly $\frac{1}{2}$-$\frac{3}{4}$ inch long, with a hard callous point, pale, many-ribbed, and often polished beneath. Flowers solitary, but usually clustered in the terminal axils. Bracts broad. Bracteoles more than half as long as the sepals. Sepals broad, striate, about $1\frac{1}{2}$ line long. Corolla-tube slightly exceeding the calyx. Lobes about 1 line long, bearded. Filaments short. Anthers slightly protruding from the tube. Fruit red or white, very fleshy, about $\frac{1}{2}$ inch diameter. *Styphelia abietina*, F. v. M.

South-West Coast and adjacent islands. Fl. Oct.-Dec.

6. C. ACEROSA, *R. Br.* A slender, erect or diffuse, much-branched shrub, from 2 to many feet high. Leaves shortly stalked, linear or narrow-lanceolate, tapering into a hard sharp point, flat or convex above, pale and many-ribbed beneath, $\frac{1}{4}$-$\frac{3}{4}$ inch long. Flowers solitary in the upper axils, on recurved peduncles. Bracts numerous, quite covering the peduncle, small below, enlarging gradually into the bracteoles, which are quite half as long as the sepals. Sepals ovate, about 1 line long, ciliate on the margin. Corolla-tube broad, about twice as long as the calyx. Lobes short, spreading, rarely bearing a few long hairs on the upper surface. Filaments rather short. Anthers in all Tasmanian specimens examined freely exserted. Fruit red, fleshy, about $\frac{1}{4}$ inch diameter, but sometimes much larger. *Styphelia oxycedrus*, F. v. M.; *Cyathodes oxycedrus*, Hook.

Common in hilly situations and on coasts. It also occurs in South-East Victoria and New Zealand. Fl. Nov.-Dec.

7. C. DIVARICATA, *Hook.* Similar in habit to the last. Leaves similar, but not exceeding $\frac{1}{2}$ inch. Flowers solitary in the upper axils, on recurved peduncles. Bracts sometimes as in the last, at others reduced in numbers, so as to leave part

of the peduncle bare. Sepals broad, ciliate. Corolla-tube about 2½ lines long. Lobes short, spreading, and bearing a few long hairs on the upper surface. Filaments short. Anthers exserted. Fruit red, fleshy, about 3 lines diameter.

Very common in hilly situations. Fl. summer and often at other seasons.

> The species bears no character of importance differing from *C. acerosa*, and doubtless should not be considered more than a variety of that species; but the tendency for the bracts to be reduced in number, leaving a portion of the peduncle bare showing its close relationship to *Lissanthe*, perhaps warrants its retention.

8. C. PARVIFOLIA. *R. Br.* A small rigid shrub, similar in habit and most details to the last two, but generally smaller in all parts. Leaves smaller and broader, but convex, so as to appear as narrow. Flowers small in the terminal axils, on very short recurved peduncles. Bracts covering the peduncle, but few and small. Sepals about ¼ line long, broad. Corolla-tube about 1½ line long. Lobes small, spreading, quite glabrous. Filaments very short. Anthers protruding. Fruit red, fleshy, about 2-2½ lines diameter.

Very common on mountains. Very close to the last two, and doubtfully distinct. Fl. Sept.-Dec.

6. BRACHYLOMA.

Corolla-tube short, with a ring of long hairs projecting into it from the base of the lobes. Lobes spreading, smooth or hairy. Filaments very short, inserted into the top of the tube. Anthers partially or quite included in the tube. Ovary 5-celled, with 1 ovule in each. Fruit a small fleshy drupe.

A very small genus, limited to Australian distribution.

Leaves with a sharp pungent point.	
Erect or spreading	1. *B. depressum.*
Prostrate or ascending	2. *B. ciliatum.*
Leaves with a hard but not pungent point	3. *B. daphnoides.*

1. B. DEPRESSUM, *Benth.* A diffuse or sub-erect, much-branched shrub, often 5-6 feet high. Leaves nearly sessile, clustered, mostly lanceolate, and tapering into a hard pungent point, mostly ½ inch long, flat or concave, many-nerved. Flowers solitary, axillary at the base of the year's growth, shortly stalked. Bracts none except the 2 bracteoles, clasping the calyx. Sepals narrow, acute, striate, ciliate on the margin, about 1 line long. Corolla-tube not exceeding the calyx. Lobes rather long, slender, and glabrous. *Lissanthe depressa*, F. v. M.

Bicheno; Bass Straits; also in Victoria. Fl. Nov.-Dec.

2. B. CILIATUM, *B.* Small, prostrate, with erect branches, 6-8 inches. Leaves nearly sessile, elliptical to lanceolate, usually pungent, 2-4 lines long, under surface pale, many-nerved. Flowers solitary, axillary, few, at the base of the year's growth. Peduncle very short. Sepals ½-¼ line, ciliate, broad, obtuse. Corolla-tube twice as long as the sepals. Lobes rather short and blunt, papillose on the upper surface. *Lissanthe ciliata*, H.

Bellerive, Grass-tree Hill, and in the north and north-east; also in South Australia and Victoria. Fl. Nov.-Dec.

> Var. *intermedium.* Erect, slender, 5-6 feet. Leaves lanceolate with a pungent point. Sepals broad, almost acute. Corolla-tube twice as long as the sepals. Lobes as long as the tube, narrow, acute. Low Head. Very close to *B. daphnoides*.

3. B. DAPHNOIDES, *Benth.* Erect and much-branched. Leaves nearly sessile, elliptical to broadly lanceolate, flat, about ¼ inch long, the point hard but not pungent as in the other two species. Flowers at the base of the year's growth

normally axillary, but the leaf often lost while the bud is yet small. Sepals about $\frac{3}{4}$ line long, ciliate. Corolla-tube 2 lines long, narrower than in the last. Lobes narrow, short, smooth or papillose-ciliate, with the usual tuft of long hairs at the base reflected down the tube. *Lissanthe daphnoides*, Hook.

Gordon River, Pittwater; also throughout Eastern and Southern Australia. Fl. Oct.-Dec.

7. LISSANTHE.

Flowers racemed or spiked. Corolla-tube short. Lobes spreading, smooth. Filaments short. Anthers hardly protruding. Ovary 5-celled, with 1 ovule in each. Fruit a fleshy drupe.

A very small genus, confined to Eastern and Southern Australian distribution. It is divided from *Leucopogon* merely by the absence of dense woolly pubescence on the corolla-lobes.

Leaves sharply pointed	1. *L. strigosa.*
Leaves rounded at end	2. *L. montana.*

1. L. STRIGOSA, *R. Br.* A small, prostrate, ascending or sub-erect, much-branched shrub, often not exceeding 6 inches, at others about 2 feet. Leaves shortly stalked, linear-lanceolate, tapering into a fine and very pungent point, mostly $\frac{1}{4}$-$\frac{1}{2}$ inch long. Flowers pink or white, small and numerous, in small axillary and terminal racemes, each flower subtended by a single bract and bearing two small bracteoles at the base of the pedicel. Sepals, in all Tasmanian plants I have examined, nearly orbicular, and not much exceeding $\frac{1}{2}$ line. Corolla-tube about $1\frac{1}{2}$ line long. Lobes about $\frac{1}{2}$ line long. Anthers protruding from the mouth of the tube. Fruit fleshy, pink or white, about $2\frac{1}{2}$ lines diameter. *Styphelia strigosa*, F. v. M.

Very common, principally in dry pastures, &c.; also in New South Wales, Victoria, South Australia, and Queensland. Fl. Sept.-Jan.

2. L. MONTANA, *R. Br.* An erect, much-branched shrub, usually 1-2 feet high in Tasmanian plants. Leaves narrow-oblong, obtuse, flat, pale, and many-nerved beneath, mostly $\frac{1}{4}$ inch long. Flowers in numerous small, dense, terminal spikes, partially diœcious, the complete staminate flowers larger than those developing perfect pistils, each flower subtended by a broad bract and enclosed at the base by 2 broad bracteoles. Sepals broad, about $\frac{1}{2}$ line long. Corolla-tube about as long as the calyx in the pistillate, and rather longer in the staminate, flowers. Lobes about 1 line long. Stamens slightly protruding. Fruit red or white, fleshy, about 2 lines diameter. *Styphelia montana*, F. v. M. (partly).

Common on the summit of Mount Wellington. It occurs also in Victoria and New South Wales. Fl. Dec.-Jan.

8. LEUCOPOGON.

Corolla-tube short, sometimes not exceeding the calyx. Lobes spreading, the upper surface more or less covered with a dense mass of white woolly hairs. Filaments short, inserted into the top of the tube. Anthers enclosed in the mouth of the tube or shortly exserted. Ovary mostly 5-celled, but varying from 1-10. Fruit a drupe, but the fleshy mesocarp often very thin.

The genus, though large (containing more than a hundred species), is restricted in its distribution. Beyond a few species found in the Indian Archipelago and New Zealand, with the corresponding portion of the Pacific, the genus is Australian.

Tall shrubs. Leaves mostly exceeding $\frac{1}{2}$ inch, lanceolate or oblong.	
Leaves $\frac{1}{2}$-1 inch. Fruit white, globular	2. *L. richei.*

Leaves 1-2 inches.
Fruit globular, red... ... ... 1. *L. lanceolatus.*
Fruit depressed, globular, yellow or white ... 3. *L. australis.*
Small shrubs or under-shrubs. Leaves mostly under ½ inch.
Plant erect or sub-erect. Flowers numerous.
Leaves concave, pointed, often appressed .. 4. *L. virgatus.*
Leaves flat, obtuse ... ... 7. *L. hookeri.*
Leaves convex, pointed.
Leaves pungent. Sepals pointed ... ... 6. *L. ericoides.*
Leaves ciliated. Sepals blunt .. ... 5. *L. collinus.*
Plant prostrate or ascending. Flowers few.
Leaves clustered, margin revolute. Flowers 2 or 3 together ... ... 9. *L. milligani.*
Leaves flat, pungent. Flowers solitary... .. 8. *L. fraseri.*

1. L. LANCEOLATUS, *R. Br.* A shrub of variable habit and detail, usually erect and tall, but sometimes depressed. Leaves lanceolate, tapering at both ends, obtuse or almost acute, flat, many-nerved, mostly 1-2 inches long. Flowers in slender axillary spikes towards the ends of the branches. Bracts and bracteoles half as long as the calyx. Sepals under 1 line long, obtuse or acute. Corolla-tube very short. Lobes short and spreading. Ovary 2-celled, tapering into the style. Fruit small, fleshy, red. *Styphelia lanceolata*, F. v. M.; *L. richei*, var. *lanceolatus*, Hook.

In various localities on the North Coast; also throughout Eastern Australia. Fl. spring.

2. L. RICHEI, *R. Br.* A tall, usually erect, shrub, often 10 or 12 feet high. Leaves lanceolate, obtuse or pointed, flat or convex, many-nerved, mostly from ¾-1 inch long. Flowers numerous, in tolerably dense, terminal, axillary spikes. Bracts and bracteoles about half as long as the calyx. Sepals under 1 line long, obtuse. Corolla-tube short. Lobes rather longer, spreading. Ovary 5 or 4-celled. Fruit small, fleshy, white. *Styphelia richei*, F. v. M.

Very common on coasts; also along the Eastern, Southern, and Western Coasts of Australia. It occurs on Chatham Island. Fl. spring.

3. L. AUSTRALIS, *R. Br.* A tall shrub, allied to *L. richei*, very fragrant when fresh. Leaves lanceolate, obtuse or pointed, convex, many-nerved, mostly 1-2 inches long. Flowers numerous, in long, rather dense, spikes in the terminal axils. Bract usually about as long as the calyx. Bracteoles about half as long. Sepals under 1 line, broad and obtuse. Corolla-tube shorter than the calyx. Lobes rather longer. Ovary 5-celled. Style abruptly inserted into it, and not tapering as in the last two species. Fruit depressed, globular, yellow or white, somewhat fleshy. *Styphelia australis*, F. v. M.

In many parts near the coast; also in Victoria, South Australia, West Australia, and New South Wales. Fl. spring.

4. L. VIRGATUS, *R. Br.* A small, sub-erect, ascending or decumbent shrub, with wiry branches. Leaves lanceolate, concave, pointed, often pressed against the branch, mostly 2-5 lines long. Flowers in short dense spikes in the terminal axils, or terminal. Bracts and bracteoles about half as long as the calyx. Sepals about 1 line long, obtuse. Corolla-tube shorter than the calyx. Lobes rather longer, spreading. Ovary 5-celled. Fruit globular, depressed, rather shorter than the calyx. *Styphelia virgata*, F. v. M.

Very common in poor dry ground; also throughout South-Eastern Australia. Fl. spring and summer.

5. L. COLLINUS, *R. Br.* A small erect or diffuse shrub, usually 1-2 feet high. Leaves oblong to broadly linear, convex, blunt, or with a callous point, ciliate on

the margin, 5 to many-nerved, 2-6 lines long. Flowers numerous, in short, dense, terminal and terminal-axillary spikes. Bracts and bracteoles small. Sepals usually obtuse, and 1 line long. Corolla-tube, in all Tasmanian specimens I have examined, not exceeding the calyx. Lobes about as long as the tube. Ovary 2-celled, tapering into the style. Fruit very small, usually only one seed maturing. *Styphelia collina*, F. v. M.; *L. ciliatus*, Hook. (included).

Very common in heaths as well as dry situations; also in New South Wales, Victoria, and South Australia. Fl. spring and summer.

6. L. ERICOIDES, *R. Br.* A very similar shrub in habit and general appearance to the last. Leaves oblong to linear, convex, with a callous, or more often a pungent point, sometimes ciliate on the margin, ¼-½ inch long, usually minutely pubescent on the upper surface. Flowers very numerous, in small, dense, axillary spikes, usually for a considerable length along the branches. Bracts and bracteoles small. Sepals about 1 line long, often narrow and acute, but sometimes broader and obtuse. Corolla-tube from slightly exceeding to twice as long as the calyx. Lobes narrow, spreading, about as long as the tube. Ovary 5-celled. Style much longer than in *L. collinus*. Fruit rather smaller than the calyx, ovoid, often curved through some of the seeds not maturing. *Styphelia ericoides*, F. v. M.

Very common; also throughout Eastern and Southern Australia. Fl. spring and summer.

7. L. HOOKERI, *Sond.* A small, erect or diffuse, much-branched shrub, with the habit and structure of *Lissanthe montana*. Leaves shortly stalked, oblong, convex, glaucous beneath, obtuse and ciliated at the point, ¼-½ inch long. Flowers in short terminal spikes, not usually developing perfect stamens and ovules on the same plant, the staminate flowers being the larger. Bracts and bracteoles small. Sepals under 1 line long, nearly orbicular, ciliate. Corolla-tube about 1½ line long. Lobes much shorter. Ovary 5-celled. Fruit white, fleshy, 1½-2 lines diameter. *Styphelia montana*, F. v. M. (partly).

Common on many hills. Grass-tree Hill, Dromedary, &c. Fl. Oct.-Dec.

> The species differs only in small details from *Lissanthe montana*, R. Br., and the two are united by Baron von Mueller; but Tasmanian forms are sufficiently distinct to warrant separate definitions.

8. L. FRASERI, *A. Cunn.* A low diffuse or prostrate shrub, the stems often buried, the branches ascending, and seldom more than a few inches long. Leaves oblong to almost linear, and from under ¼ to nearly ½ inch long, flat, with a long pungent point, margins minutely ciliate. Flowers solitary, axillary, shortly stalked. Bracts few, very small, the one below that subtending the flower developing a rudimentary flower. Bracteoles orbicular, about ½ line long. Sepals 1½-2 lines long, narrow. Corolla-tube about 2 lines long. Lobes rather shorter, recurved. Ovary 5-celled. Style rather long, pubescent. *L. stuartii*, F. v. M.

Hampshire Hills, Lake Echo, Grass-tree Hill, swamp above Back River (New Norfolk). Probably not uncommon near swamps and on hills, but overlooked. It occurs also in New South Wales, Victoria, and New Zealand. Fl. Sept.-Oct.

9. L. MILLIGANI, *Rod.* A small diffuse or prostrate shrub, with ascending branches, the leaves in annual clusters, the intervals covered with the persistent winter scale-leaves. Leaves shortly stalked, linear, with revolute margins, acute, about ¼ inch long. Flowers 2 or 3 together, in a small lateral spike. Bracts and bracteoles acute, ciliate, as long as, or shorter than, the calyx. Sepals oblong fringed, 1½ line long. Corolla-tube about as long as the calyx. Lobes rather shorter. Ovary 5-celled. Style very short. Fruit globose, red, the fleshy mesocarp thin, about 1½-2 lines diameter. *Styphelia milligani*, F. v. M., *Pentachondra verticillata*, Hook. Fl Nov.-Dec.

Mount Sorell, near Mounts Read and Tyndal.

The plant has the habit of *Pentachondra*, and, pending the discovery of its fruit, was placed in that genus, a matter that was set a rest in 1891 by T. B. Moore.

9. ACROTRICHE.

Corolla-tube short, but generally exceeding the calyx. Lobes spreading, with a tuft of hairs towards the end, and scales or tufts of hairs closing the mouth of the tube. Filaments short, inserted at the top of the tube. Anthers short, oblong. Ovary 2-10-celled. Fruit a drupe, with a thin fleshy mesocarp, the divisions of the endocarp are not quite as consolidated as in *Leucopogon*.

A small genus, of purely Australian distribution, with a fairly distinct, though not definable, character.

A. SERRULATA, *R. Br.* A small, prostrate or diffuse, much-spreading shrub. Leaves shortly stalked, spreading, linear-lanceolate, tapering into a fine pungent point, flat or convex, ¼-½ inch long, usually 3-ribbed, and irregularly ciliate. Flowers green, in small, dense, axillary spikes or heads, developing on the previous year's growth. Bracts very small. Bracteoles but little larger. Sepals blunt, rather more than 1 line long. Corolla-tube about 2 lines long. Lobes about half as long, with a small but very conspicuous tuft of hairs near the point, and a hairy scale at the junction with the tube. Ovary 5 or 6-celled, prominently ribbed. Fruit globular, nearly 2 lines diameter. *Styphelia serrulata*, F. v. M., including *A. patula*, Hook.

Common on dry hills; also in New South Wales, Victoria, and South Australia. Fl. spring and summer.

10. MONOTOCA.

Corolla-tube small, but usually exceeding the calyx. Lobes spreading, glabrous. Filaments short, inserted into the top of the tube. Ovary 1 or rarely 2-celled. Fruit a small fleshy drupe.

Purely Australian. The genus has no very distinctive character beyond the unreliable unilocular condition of the ovary in most species, but is very distinct in habit. The Tasmanian species are all variable, and their lines of demarkation not distinct.

Plant erect. Flower 5-merous.
  Leaves flat or nearly so.
    Flowers mostly in conspicuous racemes ... ... 1. *M. elliptica.*
    Flowers mostly in small axillary spikes... ... 2. *M. lineata.*
  Leaves distinctly convex.
    Flowers mostly in small spikes. Corolla-lobes very spreading ... ... 2. *M. lineata.*
    Flowers mostly in small, almost sessile, clusters. Corolla-lobes slightly spreading ... 3. *M. scoparia.*
Plant decumbent or prostrate. Leaves convex. Flowers 4-merous ... ... 4. *M. empetrifolia*

1. M. ELLIPTICA, *R. Br.* A tall erect shrub or small tree. Leaves broadly or narrowly oblong, flat or slightly convex, many-nerved, pale beneath, mostly ½-1 inch long, mostly with a pungent point. Flowers few or many together, in small but conspicuous terminal and axillary racemes. Bracts soon falling. Bracteoles very small, and embracing the base of the calyx. Sepals about ½ line long, broad. Corolla-tube campanulate, rather more than 1 line long. Lobes rather shorter than the tube, recurved. Fruit 1½-2 lines diameter. *Styphelia elliptica*, F. v. M.

A coast plant, principally in the north. It occurs also along the Eastern Coast of Australia. Fl. Sept.

2. M. LINEATA, *R. Br.* A tall erect shrub or small tree, of variable habit, some forms much resembling *M. elliptica*, and others not to be distinguished in a superficial examination from *M. scoparia*. Leaves usually broadly or narrowly oblong, flat or slightly convex, many-nerved, pungent, pale beneath, $\frac{1}{2}$-1 inch long. Flowers few together, in small axillary spikes, sometimes solitary. Bracts small, persistent. Bracteoles clasping the calyx. Sepals about $\frac{1}{2}$ line long, broad. Corolla-tube very short, almost obsolete. Lobes nearly 1 line long, spreading. Fruit about 1$\frac{1}{2}$ line diameter. *Styphelia glauca*, Lab.

Very common. Fl. spring and summer.

> Var. *linifolia*. Leaves nearly linear, with revolute margins, $\frac{1}{4}$-$\frac{3}{4}$ inch long. Longley.

3. M. SCOPARIA, *R. Br.* An erect shrub, of 2-3 feet. Leaves narrow-oblong, convex, the margins revolute, pungent, many-nerved, pale beneath, mostly about $\frac{1}{2}$ inch long. Flowers few together, seldom more than 4, in very shortly-stalked axillary clusters, often solitary. Bracts small, persistent. Bracteoles clasping the base of the calyx. Sepals about $\frac{1}{2}$ line long, broad. Corolla-tube about as long as the sepals. Lobes about as long as the tube, thickened at the end, and not as spreading as in the last species. Fruit about 1 line long. *S. scoparia*, Sm.

North-West Coast, George's Bay, Bay of Fires, Lake Petrarch, near Margate; also throughout Eastern Australia. Fl. spring.

> Var. *submutica*. A variety with the leaves almost blunt. Mount La Perouse.

4. M. EMPETRIFOLIA, *R. Br.* A diffuse or prostrate shrub, extending from 1-3 feet. Leaves conspicuously stalked and often reflexed, convex, pungent, thick, pale beneath, mostly about $\frac{1}{4}$ inch long. Flowers in small, few-flowered, axillary spikes. Sepals 4, $\frac{1}{2}$ line broad. Corolla 4-lobed, about 1 line long. The lobes about as long as the tube, spreading, not thickened at the tip. Fruit about 1$\frac{1}{2}$ line long. *Styphelia empetrifolia*, F. v. M.

Common towards the summit of mountains. Fl. Jan.

11. EPACRIS.

Corolla-tube long and cylindrical or short and campanulate. Lobes 5, glabrous. Filaments inserted into the orifice of the tube, or adnate for some distance to it. Anthers attached above the middle. Ovary 5-celled. Ovules numerous. Placentas axile. Style long or short, inserted in a tubular depression. Fruit a small capsule. Flowers solitary, axillary, the peduncle clothed with persistent bracts. Shrubs.

The genus is limited to Australia and New Zealand. Few of the species are well fixed; many are closely allied and variable.

i. Corolla relatively long, with 5 pits towards the base ... ... 1. *E. impressa.*
    Leaves under 1 line ... . 2. *E. petrophila.*
    Leaves lanceolate, obtuse ... ... 3. *E. obtusifolia.*
    Leaves acute ... ... ii.
ii. Stamens freely protruding ... ... iii.
    Stamens just protruding or enclosed ... ... iv.
iii. Leaves very concave and acute, stem-clasping at the base ... ... 11. *E. acuminata.*
    Leaves not stem-clasping ... ... 7. *E. exserta.*
iv. Leaves narrow-lanceolate ... ... v.
    Leaves very pungent, broad ... ... vi.
    Leaves with a callous point, broad ... ... vii.

v.	Sepals ciliate	8. *E. lanuginosa.*
	Sepals glabrous	9. *E. mucronulata.*
vi.	Leaves spreading, hardly stem-clasping... ...	5. *E. heteronema.*
	Leaves with a broad stem-clasping base ...	10. *E. microphylla.*
vii.	Leaves spreading	6. *E. serpillifolia.*
	Leaves imbricate	4. *E. myrtifolia.*

1. E. IMPRESSA, *Lab.* Erect, with few branches, 1-2 feet. Leaves linear-lanceolate, acute, 3-4 lines long, rarely broader, with an almost cordate base. Flowers numerous, solitary in the axils, white to dark red. Corolla ⅓-¾ inch long, with 5 pits towards the base.

Very common; also in South Australia, Victoria, and New South Wales. Fl. spring and summer chiefly.

> Var. *ruscifolia.* Leaves broad, with a cordate base. *E. ruscifolia*, R. Br.

> Var. *ceræflora.* Corolla white, about twice as long as the calyx. Bracts and sepals relatively broader than in the type. Leaves rigid, usually slightly recurved. *E. ceræflora*, Grah.

2. E. PETROPHILA, *H.* Short, rigid, depressed, with erect branches, 6 inches to 1 foot. Leaves thick, obtuse, ¾ line long, appressed on the ultimate branchlets. Flowers few at the ends of the branches, about 1 line long.

Western mountains and the Lake country; also Victoria and New South Wales. Fl. Nov.-Jan.

3. E. OBTUSIFOLIA, *Sm.* Erect, twiggy, 1-3 feet. Leaves linear-lanceolate, 3-4 lines long, concave, obtuse. Flowers numerous, solitary in the axils. Sepals 1½ line long, obtuse. Corolla somewhat exceeding the calyx. Lobes short.

Common on damp heaths on the coast; also South Australia, Victoria, New South Wales, and Queensland. Fl. summer.

4. E. MYRTIFOLIA, *Lab.* Erect, but often with a decumbent base, branched, 6 inches to 1½ foot high. Leaves flat or slightly concave, thick, ovate, with a callous but not pungent point, 2-4 lines long. Flowers few, in the upper axils. Bracts numerous, obtuse, coriaceous. Sepals 2 lines long, coriaceous, narrow, obtuse. Corolla-tube shorter than the calyx. Lobes short, obtuse. Anthers included.

> Variable. On the one hand running into *E. heteronema*, on the other into *E. serpillifolia.*

Port Arthur to Birch Inlet. Fl. spring and summer.

> Var. *corymbiflora.* Leaves very obtuse, erect, imbricate. Bracts and sepals very coriaceous, brown. Flowers clustered at the ends of the branches. *E. corymbiflora*, H. Wet heaths on the West Coast.

5. E. HETERONEMA, *Lab.* Erect, much-branched, 2-20 feet. Leaves ovate, tapering into a very pungent point, the base often cordate, concave, erect or spreading, 2-4 lines long, the margins often scarious and minutely scabrous. Flowers few, solitary in the terminal axils, or occasionally remote from the apex. Bracts and sepals rather rigid, acute, glabrous or sometimes pubescent. Sepals about 2 lines long. Corolla-tube slightly exceeding the calyx. Lobes as long as the tube, broad, acute or obtuse. Anthers just protruding.

Southport to the West Coast, and often at a considerable altitude; also in Victoria, New South Wales, and New Zealand. Fl. spring and summer.

6. E. SERPILLIFOLIA, *R. Br.* Much-branched, decumbent or sub-erect, about 1 foot high. Leaves broadly ovate, with a hard callous point, usually spreading, 1-2 lines long. Flowers numerous, solitary in the terminal axils. Bracts and sepals rather acute, glabrous. The sepals 1½ line long. Corolla-tube rather

shorter than the calyx. The lobes obtuse, as long as the tube. Anthers included. Very variable. Passing into the smaller obtuse-leaved forms of *E. myrtifolia*.

Common on mountains; also in Victoria and New South Wales. Fl. spring and early summer.

> Var. *squarrosa*. Erect, twiggy. Leaves ovate to lanceolate, 2-3 lines long, spreading. Flowers numerous all along the branches. Anthers freely exserted. *E. squarrosa* and *virgata*, H. Approaching *E. exserta*, R. Br. Longley, Carnarvon, and East Coast. In damp heaths.

7. E. EXSERTA, *R. Br.* Erect, rigid, branched, 1-2 feet. Leaves lanceolate, usually pungent, thick, spreading, recurved, 3-4 lines long. Flowers few, in the terminal axils. Bracts numerous, glabrous, obtuse, usually in rows. Sepals rigid, obtuse, 2 lines long. Corolla-tube shorter than the calyx. Lobes as long as the tube, spreading. Stamens exserted.

Eastern and northern parts. Fl. summer.

> I have here described the form with well-marked individual characters. Forms approaching *E. myrtifolia* are common, and *E. virgata*, H., which is indivisible from *E. squarrosa*, H., is often referred here.

8. E. LANUGINOSA, *Lab.* Slender, erect, usually branched at the base only, 1-3 feet. Leaves narrow-lanceolate, tapering into a slender pungent point, 3-6 lines long. Flowers numerous, in the terminal axils. Bracts and sepals acute, ciliate, the latter 2 lines long. Corolla-tube about as long as the calyx. Lobes nearly as long as the tube, spreading.

Common in heaths; also in South Australia and Victoria. Fl. mostly in the spring and summer.

9. E. MUCRONULATA, *R. Br.* Erect, much-branched, 5-8 feet. Leaves narrow-lanceolate, spreading, with a callous point. Flowers few or many, in the terminal axils. Bracts and sepals broad, nearly acute, glabrous, the latter 1½ line long. Corolla-tube about as long as the calyx, and the lobes as long as the tube. *E. franklinii*, H.

River Gordon. Fl. Nov.

10. E. MICROPHYLLA, *R. Br.* Erect, twiggy, sparely branched, 1-2 feet. Leaves broadly cordate, nearly sessile, concave, spreading, pungent, 1-2 lines. Flowers numerous all along the branches. Bracts blunt. Sepals nearly acute, about 1 line. Corolla-tube shorter than the calyx. The lobes short and obtuse. *E. gunnii*, H., included.

Common in heathy country; also in South Australia, Victoria, New South Wales, and Queensland. Fl. Sept.-Nov.

11. E. ACUMINATA, *B.* A small, much-branched, spreading shrub, 1-2 feet. Leaves ovate-lanceolate, concave, stem-clasping, but not cordate, spreading, pungent, 2-4 lines. Flowers few in the terminal axils. Bracts and sepals obtuse, minutely ciliate, the latter 1-1½ line. Corolla-tube about as long as the calyx. The lobes nearly twice as long, spreading. Anthers freely exserted. *E. mucronulata*, H.

Sorell Creek, Kingston, North-West Bay. Fl. Sept.

12. ARCHERIA.

Corolla-tube broad or campanulate. Lobes 5, short, spreading or recurved. Filaments very short, inserted at the throat of the corolla. Ovary 5-celled, with numerous ovules. Style inserted in a tubular depression, reaching nearly to the base. Fruit capsular. Flowers solitary or in racemes. The bracts at the base of the pedicel only, and deciduous.

The genus is small, and confined to Tasmania and New Zealand. It is very close to *Epacris*, and united with it by von Mueller. The Tasmanian species are endemic.

Leaves acute. Corolla-lobes smooth.
  Ovary pubescent ... ... 1. *A. eriocarpa.*
  Ovary glabrous ... ... 2. *A. hirtella.*
Leaves obtuse. Corolla-lobes bearded ... .. 3. *A. serpillifolia.*

1. A. ERIOCARPA, *Hook.* A straggling half-climbing shrub, often 10-12 feet high. Leaves arranged roughly in two rows, nearly sessile, broadly ovate to lanceolate, acutely pointed, flat, minutely serrated on the margin, 3-4 lines long. Flowers few together, terminating the branches or on short lateral branches, solitary in the axils or in short racemes. Pedicel 1-2 lines long. Sepals ovate, obtuse, very slightly ciliate on the margin, slightly exceeding 1 line long. Corolla-tube about 3 lines long, contracted at the throat. Lobes small, glabrous, hardly spreading. Ovary hirsute. Style long, protruding from the corolla. Stigma 5-lobed. Capsule about 2 lines diameter, readily separating into its component carpels. *Epacris hirtella*, F. v. M. (partly).

Near Lake St. Clair, near Macquarie Harbour, and mountains of the west, La Perouse. Fl. Sept.-Dec.

2. A. HIRTELLA, *Hook.* Erect, and stouter than the last, 10-12 feet high. Leaves roughly in 2 rows, ovate, thick, shining, flat, sharply pointed, 3-4 lines long. Flowers on stalks, 1-2 lines long, forming small terminal heads. Sepals broadly lanceolate, ciliate, nearly 2 lines long. Corolla-tube 4 lines long, slightly contracted at the throat. Lobes short, glabrous, recurved. Style long, but hardly protruding. Capsule similar to the last, but glabrous. *Epacris hirtella*, F. v. M.

Dense forests near Macquarie Harbour, Lake St. Clair, Mount La Perouse, West Coast. Fl. Sept.-Dec.

3. A. SERPILLIFOLIA, *Hook.* A depressed, stout, rigid, much-branched shrub, seldom exceeding 1-2 feet. Leaves ovate, thick, concave, keeled, blunt, with a callous point, about $\frac{1}{4}$ inch long. Flowers in numerous small, dense, terminal racemes. Sepals ovate, obtuse, about 2 lines long. Corolla-tube broad, about 2 lines long. Lobes about 1 line long, spreading, bearded with glabrous tips. Anthers included. Style very short. Stigma 5-lobed, only slightly protruding from the depression in the ovary. Capsule about $1\frac{1}{2}$ line diameter, readily splitting into (along the junction of) the carpels. *Epacris micranthera*, F. v. M.

Mount Olympus, Mount Sorell, Mount La Perouse, Mount Dundas, Adamson Peak, Mount Humboldt, &c. Fl. Dec.-Jan.

A. MINOR, *Hook.* A small form, without any tangible distinction.

13. PRIONOTES.

Corolla-tube cylindrical. Lobes 5, spreading. Stamens free from the corolla, arising from the base below the ovary. Anthers partially 2-celled, having a distinct dissepiment, but opening by a single longitudinal slit. Ovary 5-celled, with many ovules in each. Placenta axile. Style inserted in a tubular depression in the ovary. Fruit capsular.

The genus, which consists of the Tasmanian plant and a doubtful South American species, is of exceptional interest from the partially bilocular state of the anthers, thereby approaching *Ericaceæ*.

P. CERINTHOIDES, *R. Br.* A slender straggling or climbing shrub, often 20 or 30 feet high, and under favourable circumstances much exceeding 100 feet. Leaves shortly stalked, narrow-oblong, blunt, flat, margin with distant obtuse teeth, substance thick, but the principal veins distinct, netted, mostly $\frac{1}{4}$-1 inch long. Flowers bright crimson, solitary in the terminal axils, pendulous on slender stalks of usually 1-2 inches in length. Bracts few, minute. Bracteoles embracing the base of the calyx. Sepals broadly ovate, acute, ciliate, about 1½ line long. Corolla-tube about 1 inch long, cylindrical, but broadest towards the centre, contracted at the throat, lobes short and broad. Capsule hirsute, about 3 lines long.

Common on mountain-sides, principally in the west and south-west. Fl. Nov.-April.

14. SPRENGELIA.

Corolla-tube very short or obsolete. Lobes 5, very spreading. Stamens shorter than the corolla and inserted below the ovary. Anthers often cohering in a ring round the style. Disk absent. Ovary 5-celled, with several ovules in each. Placenta axile. Style inserted in a tubular depression in the ovary. Fruit capsular.

The genus is confined to Eastern Australian distribution, and consists of but three species. Closely allied to the specifically more numerous ***Andersonia*** of West Australia.

S. INCARNATA, *Sm.* An erect or sub-erect, sparsely-branched shrub, often flowering when a few inches high, at times attaining many feet. Leaves broad, and sheathing the stem at the base, tapering to a pungent apex, spreading or recurved, many-nerved, ¼-½ inch long without the sheathing base. Flowers in a terminal head formed of numerous few-flowered spikes intermixed with leafy bracts. Sepals lanceolate, almost scarious, about 3 lines long. Corolla usually rather shorter than the calyx, pink or white, the tube very short or none. Lobes lanceolate, spreading. Filaments slender. Anthers in the typical form densely pubescent, and cohering in ring round the style.

Very common. It occurs also in New South Wales, Victoria, and South Australia. Fl. spring and summer.

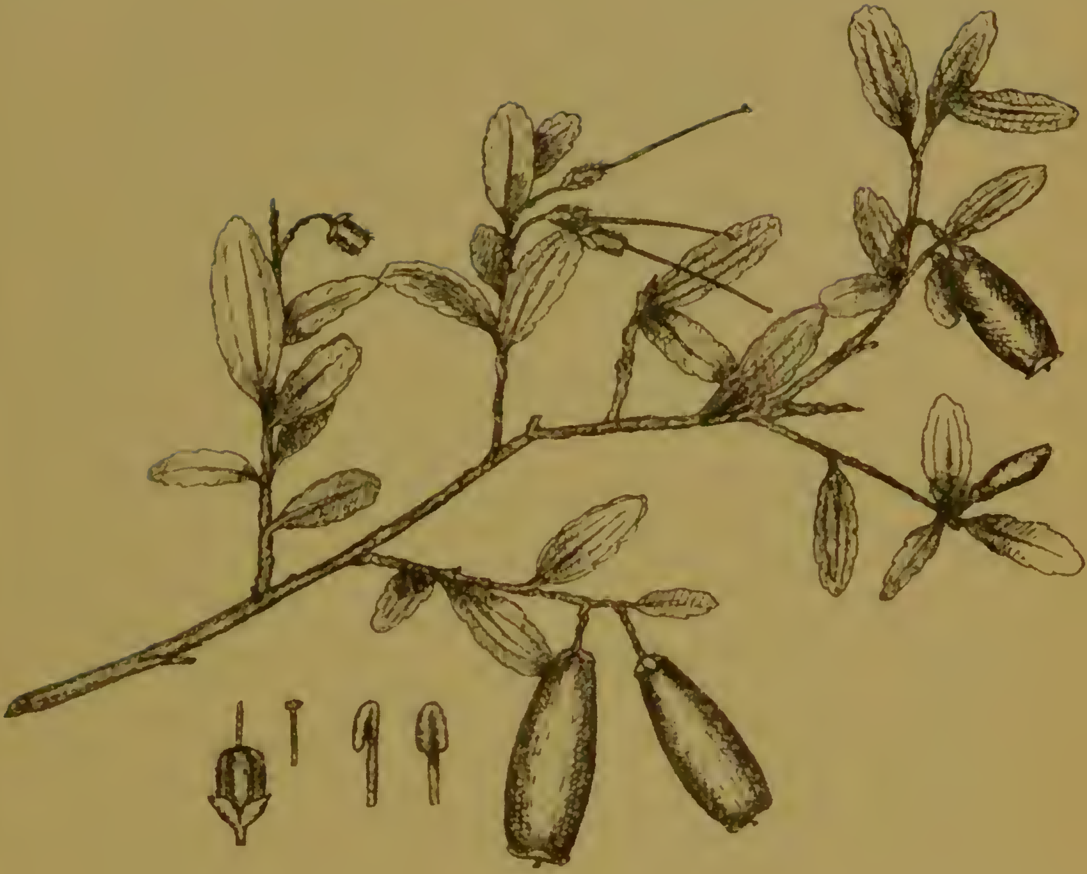
> The pubescence of the anthers and their disposition to cohere is very variable. The common mountain form has nearly always free glabrous anthers, and was described as a distinct species as *S. montana*. *S. propinqua* was a form with free pubescent anthers.
>
> Var. *distichophylla*, 2-3 inches high. Leaves 1 line, imbricate, in two opposite rows. Flowers solitary. West Coast.

15. RICHEA.

Corolla more or less conical. The lobes connate or only their extreme points free. The upper portion deciduous, the lower part remaining as a persistent ring. Stamens free, inserted below the ovary. Ovary 5-celled, with several ovules in each. Style inserted in a depression in the ovary. Fruit a capsule. Disk of free scales or none.

A genus containing only eight species, seven of which are confined to Tasmania; the other one, principally Tasmanian, occurs also in the Australian Alps. The genus, as here understood, includes all allied species with calyptriform corollas; the genera *Cystanthe* and *Pilitis* are suppressed. The leaves have the same broad sheathing base as in *Sprengelia*, but leave annular scars when shed.

Flowers in small heads. Leafy bracts persistent.
  Leaves more or less recurved. Disk none.
    Anthers splitting into 2 lobes above … … 2. *R. procera.*
    Anthers entire … … … … … 1. *R. sprengelioides.*
  Leaves narrow, straight. Disk very distinct.
    Leaves about ½ inch long. Stamens 2 lines long 3. *R. acerosa.*
    Leaves about 1 inch long. Stamens very long… 4. *R. milligani.*



PRIONOTES CERINTHOIDES. *R. Br.*

Flowers in compound panicles. Leafy bracts deciduous.
  Leaves usually under 2 inches.
    Sepals and stamens about 1½ line ... ... 5. *R. gunnii.*
    Sepals about ¾ line and stamens 3 lines... ... 6. *R. scoparia.*
  Leaves 6 inches to many feet long.
    Leaves 6 inches to 1 foot. Corolla about ⅓ inch long ... ... 7. *R. dracophylla.*
    Leaves very long. Corolla about 1½ line long ... 8. *R. pandanifolia.*

1. R. SPRENGELIOIDES, *F. v. M.* An erect sparely-branched shrub, from 1 to several feet. Leaves broadly ovate-lanceolate, acutely pointed, spreading or recurved, about ½ inch long without the sheathing base. Flowers in small terminal heads, each flower subtended by a persistent leafy bract, the short stalk clothed with rather large bracts. Sepals lanceolate, about 2 lines long. Corolla 3-4 lines long, conical. Filaments slender, about 3 lines long, glabrous in the typical form, but commonly minutely papillose. Anthers attached about the middle, linear and splitting in the typical form along the ventral suture from apex to base, the dorsal suture remaining entire. Disk none. *Cystanthe sprengelioides*, Hook.

Common on mountains. Fl. Nov.-Dec.

2. R. PROCERA, *F. v. M.* In the typical form tall and slender, often attaining 10-20 feet. Leaves slender, recurved, ¾-1 inch long. Inflorescence and floral envelopes similar to the last. Filaments papillose and much thickened above. Anthers attached from the middle to the base to the thickened filament, splitting along the dorsal as well as ventral sutures, the dehiscence not extending to the base. Disks none. *Cystanthe procera*, Hook.

Common in hilly situations. Fl. Oct.

> The distinctive characters between this and the last, namely, habit, foliage, papillose filaments, attachment and dehiscence of anthers, are traceable in all stages of variability.

3. R. ACEROSA, *F. v. M.* A small erect shrub, seldom exceeding 4 feet. Leaves narrow-lanceolate, acutely pointed, about ½ inch long, less spreading than in *R. sprengelioides*. Inflorescence and flowers similar to the last two. Sepals broad, acute, 2 lines long. Filaments and anthers similar to, but shorter than, those of *R. sprengeliolides*. Disk of 5 rather long, usually bifid, scales. *Pilitis acerosa*, Hook. *Cystanthe acerosa*, F. v. M.

Found on many mountains. Fl. Dec.-Jan.

4. R. MILLIGANI, *F. v. M.* An erect sparely-branched shrub, 5 or 6 feet high. Leaves narrow-lanceolate, tapering into a pungent point, clustered at the ends of the branches, mostly 1-1½ inch long. Flowers in small terminal heads, each flower subtended by a leaf-like bract, and the very short stalk clothed with rather long acute bracts. Sepals somewhat resembling the bracts, about 4 lines long. Corolla narrow-conical, about 5 lines long, seldom deciduous. Filaments slender, elongating to 1 inch. Anthers narrow-linear. Disk of 5 broad, usually bifid, scales. *Pilitis milligani*, Hook.; *Cystanthe milligani*, F. v. M.

Mount Sorell, Mount Field East, Mount Zeehan, Hartz Mountain to Adamson Peak. Fl. Dec.

5. R. GUNNII, *Hook.* A small erect shrub, seldom exceeding 3 feet, often flowering when under 1 foot high. Leaves narrow-lanceolate, pungent, usually recurved, from 1-2 inches long. Flowers in terminal, somewhat elongated, dense, compound panicles, each small cluster subtended by a deciduous leaf-like bract. Flowers nearly sessile, surrounded at the base by a single bract and 2 bracteoles. Sepals ovate, acute, about 1½ line long. Corolla broadly conical, about 2 lines long. Filaments about as long as the calyx. Anthers shortly 2-lobed.

Western mountains, Blue Tier, Mount Wellington. It also occurs in the Australian Alps. Fl. Feb.

6. R. SCOPARIA, *Hook.* A rigid erect or spreading shrub, usually 2-8 feet high. Leaves narrow-lanceolate, pungent, erect, but spreading towards the points, 1-3 inches long. Inflorescence as in *R. gunnii.* Sepals broad, about $\frac{3}{4}$ line long. Corolla oblong, about 4 lines long. Filaments about 3 lines long. Anthers shortly 2-lobed.

Western mountains, Mount Wellington, near Hamilton; common in the south. Fl. Nov.-Jan.

7. R. DRACOPHYLLA, *R. Br.* An erect or spreading, sparely-branched shrub, usually 6-12 feet, but often smaller or larger. Leaves crowded at the ends of the branches, lanceolate, acute, recurved, mostly 6 inches to 1 foot long. Flowers in elongated, dense, compound panicles, often 8-12 inches long, each partial panicle subtended by a very deciduous leaf-like bract. Flowers nearly sessile, the bracts soon falling. Sepals broad, pointed, about $\frac{1}{2}$ line long. Corolla oblong, about 4 lines long. Filaments about 3 lines long. Anthers shortly 2-lobed.

Common in mountain gullies, &c., in the south and west. Fl. Sept.-Nov.

8. R. PANDANIFOLIA, *Hook.* A small tree, often from 20-30 feet, erect, and sparingly or not at all branched. Leaves clustered at the top of the stem, 3-5 feet long, lanceolate. Flowers in axillary compound panicles, the leaf-like bracts very deciduous, the panicle seldom more than 3 or 4 inches long. Flowers small, stalked. Bracts membranous, soon falling. Sepals broad, blunt, about $\frac{1}{2}$ line long. Corolla ovate, about $1\frac{1}{2}$ line long. Filaments 1-$1\frac{1}{2}$ line long. Anthers shortly lobed.

Common in many parts in central, western, and south-western districts. Fl. Nov.-Jan.

16. DRACOPHYLLUM.

Corolla-tube distinct. Lobes 5, spreading. Stamens free, and inserted below the ovary or partially adnate to the corolla. Disk of 5 distinct scales. Ovary 5-celled, with many ovules in each. Style inserted in a depression in the ovary. Leaves with broad sheathing bases. Close to *Richea*, but the corolla is urceolate and not deciduous.

Confined to Australia, New Zealand, and Southern Pacific.

Erect shrub. Leaves 1-3 feet long ... ... 1. *D. milligani.*
Moss-like, densely tufted ... ... 2. *D. minimum.*

1. D. MILLIGANI. *H.* Erect, from 1-8 feet, unbranched. Leaves lanceolate 6 inches to 2 feet, similar to *Richea pandanifolia.* Flowers very numerous, in a long, loose, terminal, compound panicle, the leaf-like bracts persistent. Corollas pink or white, urceolate. The lobes recurved, short.

Adamson Peak, La Perouse, Mount Sorell, Mount Read, &c. Fl. Dec.-Jan.

2. D. MINIMUM. *F. v. M.* Stems erect, 2-4 inches, but densely massed in cushions, often 2-3 feet diameter, exactly resembling *Donatia novæ-*, *Zelandieæ*, and *Abrotanella forsterioides.* Leaves lanceolate, appressed, imbricate, acute, lines. Flower terminal, solitary. Sepals acute, 2 lines long. Corolla-tube as long as the calyx. The lobes as long a the tube, obtuse, spreading.

Western mountains, Mount Humboldt, Mount La Perouse, &c. Fl. Dec.

Near to, but distinct from, *D. muscoides*, H., of New Zealand.

ORDER XLVI. *PLUMBAGINACEÆ.*

Calyx tubular, 5-ribbed. Corolla regular of 5 free or more or less united petals. Stamens 5, inserted below the ovary, or partially adnate to the petals. Anthers versatile, 2-celled. Ovary 1-celled, with a solitary reclinate ovule. Styles 5, free or more or less united. Fruit a capsule.

The order has a very wide distribution, principally on coasts.

STATICE.

Calyx expanded above, with 5 ribs projecting into as many short lobes, dry and coloured. Petals slightly united at the base. Styles free, linear. Fruit included in the calyx.

A common maritime genus of the Northern Hemisphere. The only Tasmanian, also Australian, representative extends to New Caledonia, China, and Japan.

S. AUSTRALIS, *Spreng.* Leaves all radical, oblong, 1½-3 inches long, entire, stalked. Flowers numerous, in a broad panicle raised on an angular stem, 1 foot to 18 inches high. Calyx-lobes pink, ribs hairy. Petals yellow, rather longer than the calyx. *Statice taxanthema*, Rœm.

On muddy coasts in the north. Recorded also from Queensland, Victoria, and New South Wales. Fl. summer.

ORDER XLVII. *PRIMULACEÆ.*

Calyx tubular, with usually 5 lobes or teeth. Corolla-tube often very short, lobes or divisions of the same number as the calyx: in rare cases, not Tasmanian, corolla absent. Perfect stamens, similar in number, and opposite to the divisions of the corolla. Ovary 1-celled, with 1 or more ovules. Placenta free, central. Style single. Stigma capitate. Fruit capsular.

A common northern temperate order, poorly represented in Australian distribution.

Corolla red or blue. Leaves opposite ... ... 1. *Anagallis.*
Corolla white. Leaves alternate ... ... 2. *Samolus.*

1. ANAGALLIS.

Calyx free, deeply 5-cleft. Corolla divided nearly to the base. Capsule bursting by a transverse division, the upper portion lifting off.

A. ARVENSIS, *Linn.* A procumbent spreading annual, 6 inches to 1 foot long. Leaves ovate, opposite, sessile, mostly about ½ inch long. Flowers bright red or blue, on long stalks, solitary, axillary. Corolla broadly spreading, about ¼ inch diameter.

Introduced, but widely established. Very common in Europe and Northern Asia. Fl. all spring and summer.

2. SAMOLUS.

Calyx tubular, spreading, united with the wall of the ovary towards the base. Lobes 5. Corolla-tube short; lobes 5, spreading, with 5 filiform staminodia-like processes alternating with them. Stamens 5, opposite the corolla-lobes. Fruit a capsule, half immersed in the adnate calyx-tube, and dehiscing by 5 valvular openings above.

A small genus, principally of the Southern Hemisphere.

S. REPENS, *Pers.* A small perennial, with prostrate-ascending or sub-erect stems, seldom above 6 inches high. Leaves alternate, more or less stalked, obovate to linear, ½-2 inches long. Flowers on long stalks, few together in the terminal axils. Calyx-tube about 1 line long, the lobes ovate, about the same length. Corolla very spreading, the tube about 1 line long, the lobes oblong usually, in Tasmanian specimens, nearly 3 lines long. Placenta central. Seeds numerous. *S. littoralis*, Hook.

Very common in salt marshes, &c. It occurs on the coast throughout extra-tropical Australia, and also in New Zealand and New Caledonia. Fl. spring and summer.

ORDER XLVIII. *OLEACEÆ.*

Flowers regular. Calyx free. The sepals united nearly or quite to the apex, usually 4 or 5. Corolla various. Petals usually united into a long or short tube, occasionally quite free, usually 4 or 5 in number, but sometimes only 2 petals or none. Stamens 2, adhering to the base of the corolla, on opposite sides of the ovary. Anthers 2-celled. Ovary 2-celled, with normally 2 ovules in each cell. Fruit a drupe or capsule, often maturing but 1 seed.

A small widely-distributed order.

NOTELÆA.

Calyx small, 4-toothed. Corolla small, of 4 distinct or nearly distinct petals. Fruit a drupe, maturing but one of the ovules.

The genus is confined to Australia and Tasmania.

N. LIGUSTRINA, *Vent.* A tall shrub or small tree, usually freely branched and diffuse. Leaves narrowly or broadly lanceolate, shortly stalked, 1-3 inches long, margin entire, opposite. Flowers numerous, in slender axillary racemes towards the ends of the branches. Calyx-lobes about ⅓ line long. Petals about 1 line long, spreading. Style very short. Stigma entire or 2-lobed. Fruit nearly globular, about ½ inch diameter, very succulent, from white, through pink, to dark-purple.

Common in many parts. It occurs also in Victoria and New South Wales. Fl. early spring.

ORDER XLIX.—*APOCYNACEÆ.*

Flowers regular. Sepals free or nearly so, and not adnate to wall of ovary. Corolla regular, gamopetalous. Lobes 5, spreading. Stamens 5, alternate with corolla-lobes, inserted to the corolla-tube. Anthers occasionally cohering or connate in a tube round the style. Ovary of 2 free or intimately-united carpels. Ovules few or many. Placentas axile or parietal. Fruit a drupe, berry, capsule or follicles. Leaves, in Tasmania genera, opposite.

The order is large, and found principally in tropical and sub-tropical localities. It has a world-wide distribution, except in cold regions. Only two genera, each with a single species, occur in Tasmania.

Leaves oblong. Fruit fleshy ... ... 1. *Alyxia.*
Leaves lanceolate. Fruit long, dry ... ... 2. *Lyonsia.*

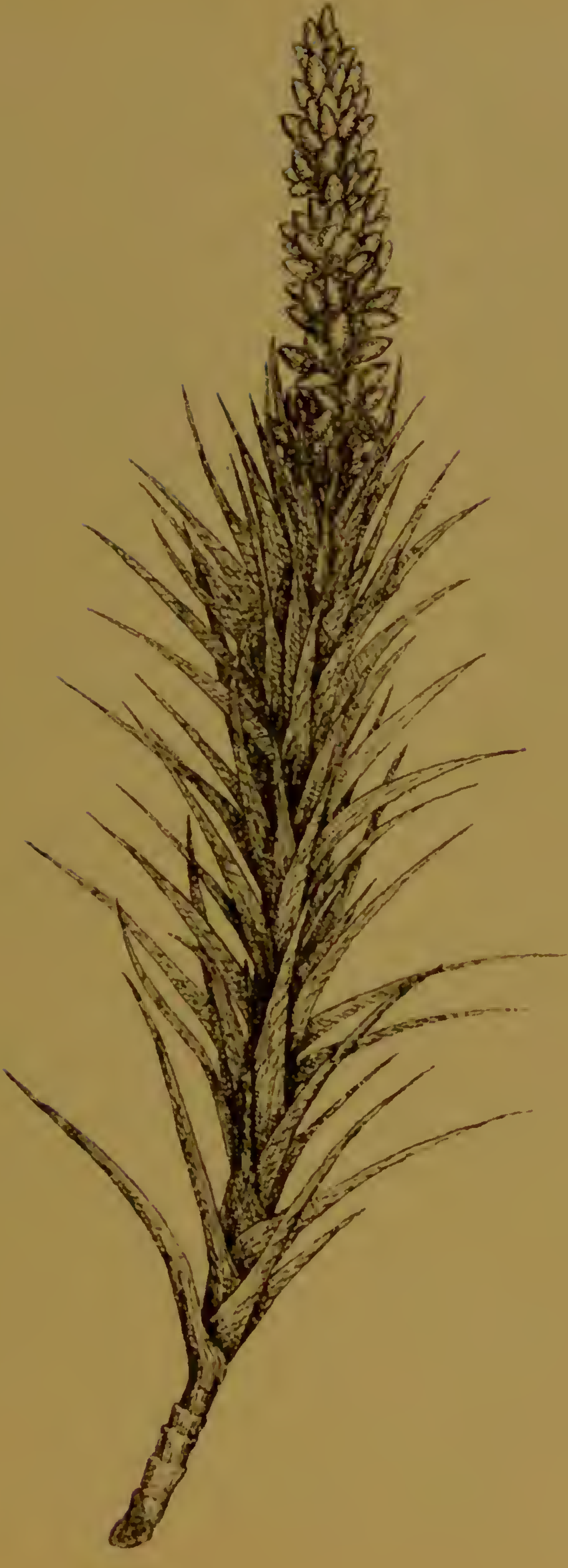
1. ALYXIA.

Corolla-tube cylindrical. Lobes spreading. Anthers enclosed. Ovary of 2 distinct carpels, but styles combined. Ovules few in each carpel. Fruit a drupe or berry, often developed as 2 or more distinct articles, each 1-seeded.

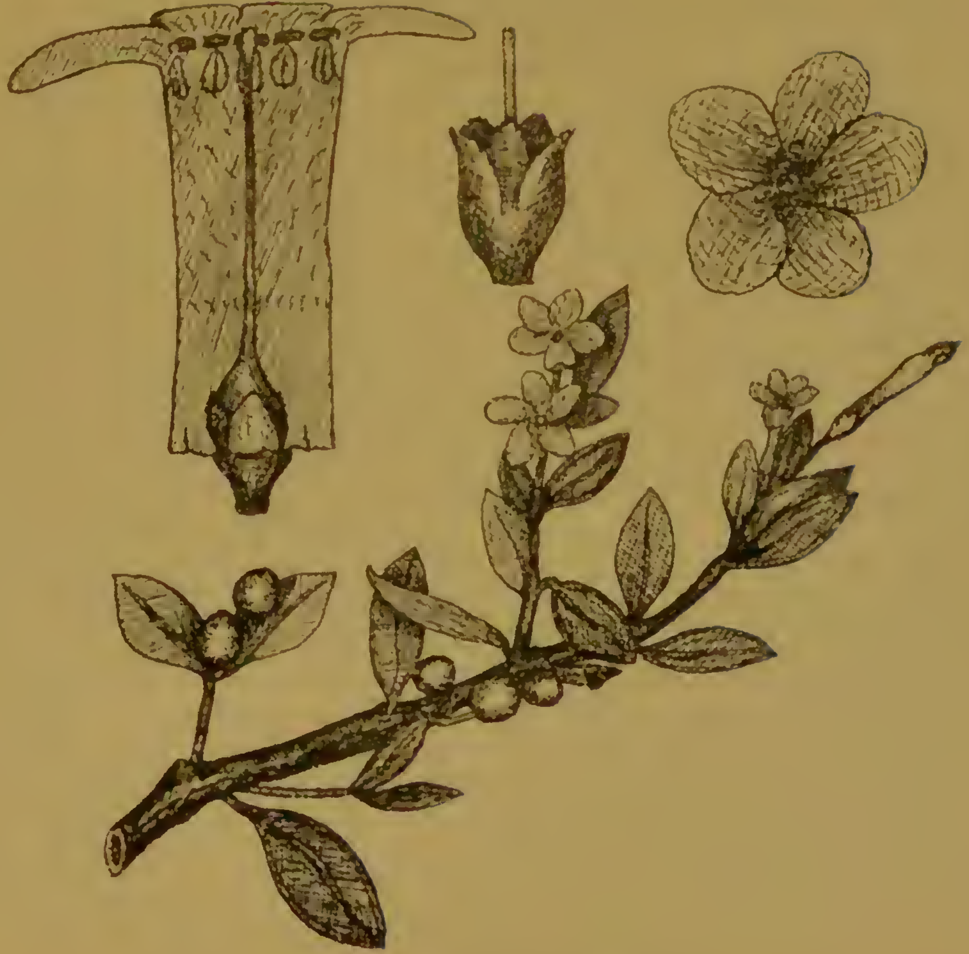
The genus is small, and extends to the Pacific and Southern Asia.

A. BUXIFOLIA, *R. Br.* A low, rigid, widely-spreading, much-branched shrub. Leaves occasionally 3 in a whorl, normally opposite, from oblong to almost orbicular, blunt, with often a small point, and narrowed below into a short stalk, thick, margins recurved, ½-1 inch long. Flowers few together, in terminal clusters, each shortly stalked. Calyx about 1 line long. Corolla-tube slender, often 4-5 lines long. Lobes broad, spreading, about 2 lines long. Berries ovoid, orange to red, about ¼ inch diameter, mostly single, but often 2, rarely 3 or 4, developed from one pistil and arranged as distinct articles. Seeds very convolute.

George's Bay, many places on the North Coast; Bass Straits; also on the coast throughout extra-tropical Australia. Fl. Sept.-Oct.



RICHEA SCOPARIA. *H.*



ALYXIA BUXIFOLIA. *R. Br.*

2. LYONSIA.

Corolla-tube cylindrical, often very short. Lobes narrow, spreading, more or less bearded on the upper surface. Stamens inserted low down in the tube. Anthers narrow, cohering in a ring round the style. Ovary 2-celled, with many ovules in each. Fruit an elongated capsule or combined follicles. Placenta axillary. Seeds with a tuft of hairs.

A small, purely Australian, genus.

L. STRAMINEA, *R. Br.* A slender climber, often ascending trees to a considerable height. Leaves broadly lanceolate, 2-4 inches long, opposite, shortly stalked. Flowers numerous, in irregular compound panicles towards the ends of the branches. Calyx about 1 line long. Corolla-tube about as long as calyx. Lobes spreading, about 2 lines long, bearded towards the base. Stamens forming a cone. Fruit about 2-3 inches long, the carpels separating when dry, leaving the placentas and seeds attached to the common septum.

Common in shady places, chiefly in the north, Waterworks (Hobart), Macquarie Harbour, near Reminé, near Kingston; also in New South Wales and Victoria. Fl. spring.

ORDER L.—*LOGANIACEÆ.*

Flower regular. Calyx tubular, free from ovary, the lobes usually 4 or 5, occasionally 2, rarely 6 or 7. Corolla gamopetalous. Lobes usually 4 or 5. Stamens similar in number to lobes of corolla, and inserted into the tube. Ovary mostly 2-celled, rarely 3-5, the dissepiment sometimes imperfect. Style single, or more or less divided into 2. Stigma bilobed. Ovules 1 to many in each cell. Fruit a capsule or berry. Leaves opposite. The order is small, and includes rather diverse types intermediate, in many respects, between *Rubiaceæ*, *Apocynaceæ*, and *Gentianaceæ*.

It is widely distributed in both Hemispheres, but principally in warm places In Tasmania only one genus is represented.

MITRASACME.

Calyx 4 or 2-lobed. Corolla-tube a short or elongated cylinder. Lobes 4. Stamens 4. Ovary 2-celled. Ovules several. Style usually simple, but dividing more or less as the pistil matures. Fruit a variously-formed capsule.

Excepting 2 or 3 from tropical Asia the genus is Australian.

Calyx 4-lobed.
  Calyx divided nearly to base.
    Capsule ovoid, with 2 erect styles ... ... 1. *M. archeri.*
    Capsule compressed, triangular, with spreading styles .. .. 2 *M. montana.*
  Calyx divided to the middle.
    Corolla-lobes much exceeding tube ... ... 3. *M. serpillifolia.*
    Corolla-lobes much shorter than tube ... ... 4. *M. pilosa.*
Calyx 2-lobed.
  Styles cohering in mature flower ... ... 5. *M. paradoxa.*
  Styles distinct in mature flower .. .. 6. *M. distylis.*

1. M. ARCHERI, *Hook.* A small, glabrous, densely-tufted perennial. Stems seldom attaining 1 inch. Leaves of a tough consistency, shining, oblong, blunt, margin transparent, crowded, about 1 line long. Flowers nearly sessile, in the terminal axils. Calyx-tube very short, the lobes leaf-like, 2 about 1 line long and obtuse, the inner 2 shorter, narrower, and acute. Corolla-tube broad, nearly 1

line long. Lobes about as long as the tube. Ovary tapering into 2 short styles cohering together. Capsule with the 2 styles diverging, triangular.

Western mountains, Lake Fenton, Mount Humboldt, Adamson Peak, La Perouse, Mount Geikie, &c. Fl. Dec.

2. M. MONTANA, *Hook.* A small perennial, forming prostrate dense patches of often a few inches. Leaves broadly obovate, thick, contracted into a short stalk, 1-2 lines long. Flowers in the terminal axils nearly sessile, or on stalks often ½ inch long. Calyx-tube very short, the lobes about 1 line long. Corolla-tube broad, about 1 line long. Lobes about ½ line or under. Ovary tapering into 2 short cohering styles. Capsule compressed, the styles diverging, causing the capsule to be triangular.

Common on mountain-tops. It occurs also in Victoria. Fl. Dec.

3. M. SERPILLIFOLIA, *R. Br.* Slender in habit. Leaves ovate to narrow-oblong, blunt, 1-2 lines long. Flowers axillary. Calyx about 1 line long, divided to about the middle. Corolla-tube very short. Lobes spreading, about 1½ line long. Ovary bearing the styles apart at the base, but they cohere towards the stigmas. Capsule ovate, surmounted by the persistent styles.

Western mountains, Hampshire Hills; also in New South Wales and Victoria. Fl. Jan.-Feb.

4. M. PILOSA, *Lab.* A small prostrate or sub-erect perennial, seldom exceeding a few inches in length, more or less hirsute. Leaves ovate-lanceolate to nearly orbicular, 2-3 lines long. Flowers in the typical form nearly sessile in the terminal axils. Calyx 1½ line long, the lobes as long as the tube. Corolla-tube slightly exceeding the calyx, contracted and bearded at the throat. Lobes very short and broad. Ovary with the styles far apart at the base, and uniting towards the stigmas. Capsule ovate, surmounted by the persistent over-arching styles.

Common in heathy and sandy places; also in New South Wales, Victoria, and South Australia. Fl. Nov.-Dec.

> Var. *stuartii.* More erect and less hirsute than in the type. Leaves mostly lanceolate. Flowers on long slender stalks, terminal or in the terminal axils, rather larger in detail than in the type. Macquarie Harbour, Longley, George's Bay.

5. M. PARADOXA, *R. Br.* A small, slender, erect, annual, slightly branching or simple in the typical form, often tufted and ascending, ½ to several inches high. Leaves connate, sheathing, broadly or narrowly lanceolate, thick or rather thin, 1-3 lines long. Flowers on long slender stalks, solitary or few together, terminal and axillary. Calyx tubular, with 2 short, broad, obtuse lobes, about 1 line long in the flowering stage, enlarging subsequently. Corolla-tube shorter than the calyx, contracted about the upper third, expanded towards the orifice. Lobes very short, obtuse. Styles separated at the base, united towards the stigmas. Capsule shorter than the calyx, ovoid, surmounted by the styles, usually still connate.

Common on coast in many parts. It also occurs throughout extra-tropical Australia. Fl. Nov.

6. M. DISTYLIS, *F. v. M.* Similar in habit and detail to the smaller forms of *M. paradoxa.* Styles sometimes cohering in the bud, but quite distinct and parallel at the time of flowering.

George Town, Kelvedon, George's Bay; also in Victoria and South Australia. Fl. spring.

> I include this more from its presence in the works of Hooker, Bentham, and von Mueller than from any respect for its specific distinctness.

ORDER LI.—*GENTIANACEÆ.*

Calyx-tube usually short, the lobes usually 4 or 5. Corolla regular, in most genera gamopetalous, tube often very short. Lobes similar in number to lobes of calyx. Stamens same number, inserted into the tube. Ovary 1-celled, or imperfectly divided by a more or less developed dissepiment. Ovules numerous. Placentas parietal, except where dissepiment is nearly or quite complete. Style single. Fruit capsular, rarely succulent.

A large order in the Northern Hemisphere: very poorly represented in southern temperate parts.

Erect, with opposite leaves.
Corolla-lobes much shorter than tube.
Calyx divided nearly to the base ... 1. *Sebæa.*
Calyx with very short obscure lobes ... 2. *Erythræa.*
Corolla-lobes much exceeding tube ... 3. *Gentiana.*
Erect or creeping. Leaves alternate or radical ... 4. *Limnanthemum.*

1. SEBÆA.

Calyx deeply divided, the lobes 4 or 5. Corolla-tube cylindrical. Lobes short, similar in number to calyx-lobes. Stamens inserted in the throat of corolla-tube. Ovary completely 2-celled. Placenta consequently axile.

A small genus, occurring in many parts of the Southern Hemisphere.

Flowers in 5 parts ... ... 1. *S. ovata.*
Flowers in 4 parts ... ... 2. *S. albidiflora.*

1. S. OVATA, *R. Br.* An erect, simple, or slightly-branched annual, 2-8 inches high. Leaves sessile, opposite, broadly ovate. Flowers in loose, terminal, irregular cymes, stalked or nearly sessile. Calyx 2½ lines long, the lobes lanceolate, acute, keeled. Corolla yellow, the tube as long as the calyx. Lobes much shorter.

Very common in pastures. It occurs throughout extra-tropical Australia. Fl. Sept.-Nov.

2. S. ALBIDIFLORA, *F. v. M.* A very similar plant to the last, but differs in the compacter inflorescence and 4-merous flowers. Erect, simple, or slightly-branched annual, 1-3 inches high. Leaves similar to last. Flowers all sessile or nearly so, in compact, terminal, and lateral cymes. Calyx-lobes broad, obtuse, translucent on the margin, green, but not keeled along the centre. Corolla whitish, hardly exceeding the calyx.

Muddy Plains, George Town, Riverton, near George's Bay; also in Victoria and South Australia. Fl. Nov.-Dec.

2. ERYTHRÆA.

Calyx-lobes usually very short, 4 or 5. Corolla-tube cylindrical. Lobes spreading, similar in number to calyx. Stamens inserted in the tube. Ovary 1-celled, with 2 parietal placentas. Style deciduous.

Widely spread in northern temperate parts. A solitary species occurs in Australian distribution.

E. AUSTRALIS, *R. Br.* An erect sparely-branched annual, 6-18 inches high. Leaves opposite, oblong to lanceolate, obtuse, mostly ¼-1 inch long. Flowers in a dichotomous leafy cyme, sessile. Calyx about ¼ inch long, the lobes 4, very short. Corolla pink, rather longer or shorter than the calyx. Lobes 4, oblong, spreading, rather short. Capsule oblong, shorter than the calyx.

Huonville, salt marshes on the banks of the Tamar. It occurs throughout Australia and parts of the Pacific, and differs from the European *E. spicata* only in the 4-partite floral whorl. Fl. Dec.-Jan.

3. GENTIANA.

Calyx deeply 5 or 4-lobed. Corolla-tube variable, but short in Tasmanian species. Lobes rather long. Stamens attached in the corolla-tube. Ovary 1-celled, with 2 parietal placentas. Style persistent, very short. Stigma nearly sessile.

A very large genus in the Northern Hemisphere. Represented in Australia by but one species.

G. SAXOSA, *Forst.* An erect plant, simple or branched, annual or the stock becoming perennial in favourable situations, a few to 18 inches high. Lower leaves clustered at base of stem, spathulate, stalked, often 2-3 inches long; stem-leaves opposite, sessile, lanceolate, mostly $\frac{1}{2}$-1 inch long. Inflorescence solitary, a leafy raceme, trichotomous cyme, or compact corymb, according to vigour of plant. Flowers on long or short stalks. Calyx about $\frac{1}{2}$ inch long, the lobes lanceolate, acute. Corolla broadly campanulate, $\frac{1}{2}$-1$\frac{1}{2}$ inch long, white, purple, or variously striped, tube very short. Lobes obovate. Capsule narrow, much exceeding the calyx. *G. montana*, Hook. "Fl. Tas." and Benth. "Fl. Aust."

Very common, but principally at a considerable altitude. It occurs also in New South Wales, Victoria, and South Australia; likewise in New Zealand and South America. Fl. spring and summer.

4. LIMNANTHEMUM.

Calyx 5-cleft nearly to the base. Corolla-tube very short, expanding. Lobes 5, very spreading. Stamens inserted into corolla-tube. Ovary 1-celled, with 2 parietal placentas. Fruit capsular, and opening into 4 valves, or coriaceous and bursting irregularly, or more or less succulent and indehiscent.

A rather large genus, of varied development and wide distribution, occurring in South Africa and North America. I have preferred to follow von Mueller in incorporating the three genera, *Limnanthemum*, *Villarsia*, and *Liparophyllum*.

Leaves broadly ovate to orbicular.
  Plant erect. Flowers large... ... ... 1. *L. exaltatum.*
  Plant creeping. Flowers about 2 lines ... 2. *L. exiguum.*
Leaves linear ... ... 3. *L. gunnii.*

1. L. EXALTATUM, *F. v. M.* An erect plant, varying from 6 inches to many feet. Leaves usually all radical, on long stalks, and reniform, occasionally obscurely toothed and cordate, often floating, 1-3 inches diameter. Flowers usually numerous, in spreading, irregular, terminal panicles, each branch subtended by a linear leaf-like bract. Calyx-lobes lanceolate, exceeding $\frac{1}{4}$ inch. Corolla sulphur-yellow, about 1 inch diameter, copiously fringed at the base of the lobes. Stigmatic lobes ovate, thick. Capsule opening in 4 valves. *Villarsia reniformis*, Benth.; *Villarsia parnassifolia*, Hook.

Very common in water and marshes. When removed from water leaves often ovate. It occurs also in Queensland, New South Wales, Victoria, and South Australia. Fl. summer.

2. L. EXIGUUM, *F. v. M.* A small plant, creeping and tufted, forming tangled masses in mud. Leaves nearly orbicular, about 3 lines diameter, mostly on very long slender stalks. Flowers solitary, or 2 or 3 together, on shorter stalks than the leaves. Calyx about 2 lines long, the lobes as long as the tube. Corolla yellow, about as long as the calyx, or rather longer. Style short, with short broad stigmatic lobes. Seeds few, globose, black and shining when ripe.

Southport, Huonville, Mount Field East, Blessington, &c. Probably very common. Fl. Dec.-Jan.

3. L. GUNNII, *Hook.* A small creeping and tufted plant. Leaves narrow-linear, thick, fleshy, obtuse, with a sheathing base, 1-1½ inch long. Flowers shortly stalked, solitary amongst the leaves. Calyx-lobes linear, about 2 lines long. Corolla-lobes ovate, slightly hairy within. Ovary tapering into a short style, with 2 broad stigmatic lobes. Fruit globular, succulent, indehiscent, about ¼ inch diameter. *Liparophyllum gunnii*, H.

Alpine lakes, in numerous localities; also in New Zealand. Fl. Dec.

ORDER LII. *BORAGINACEÆ.*

Flowers regular, or nearly so. Calyx usually 5-lobed. Corolla-tube usually short, sometimes long; lobes same as in calyx, spreading. Stamens similar in number to corolla-lobes, rarely fewer, inserted in the corolla-tube. Ovary usually (in all Tasmanian genera) 4-lobed, with 1 ovule in each, and a simple style arising from the base between the lobes, sometimes 2-lobed or entire, with a terminal style. Fruit usually dry, forming 4 one-seeded nuts, sometimes drupaceous.

A very large order, represented throughout temperate and tropical parts, Tasmania possessing species of but two of the most widely-distributed genera.

Flowers in scorpioid cymes.
  Ovary and fruit smooth ... ... 1. *Myosotis.*
  Ovary and fruit roughly hirsute ... ... 2. *Cynoglossum.*
Flowers solitary, axillary ... ... 3 *Lithospermum.*

1. MYOSOTIS.

Calyx deeply divided Corolla-tubes cylindrical, with 5 scales nearly closing the orifice; lobes spreading. Nuts 4, smooth and shining.

Flowers small. Anthers included... ... ... 1. *M australis.*
Flowers rather large, white. Anthers and filaments freely exserted .. ... 2 *M. suaveolens.*

1. M. AUSTRALIS, *R. Br.* A sub-erect or ascending annual, sparsely branched, and chiefly at the base, hispid, from a few inches to 1½ foot high. Lower leaves broadly or narrowly spathulate, 1-2 inches long, narrowed into rather long stalks; stem-leaves smaller and sessile. Flowers small, white or yellowish. Calyx-segments lanceolate, about 1 line long, covered with hooked hairs. Corolla-tube rather longer than the calyx; lobes about ½ line long. Anthers and style nearly or quite included in the corolla-tube.

Common, especially at a considerable altitude; also throughout extra-tropical Australia and New Zealand. Fl. Dec.

2. M. SUAVEOLENS, *Poir.* A sub-erect perennial, usually many simple branches from the stock, hirsute, 1-2 feet high. Leaves broadly to narrowly lanceolate, lower one stalked, upper ones sessile, 1-4 inches long. Flowers white or pale blue, on short slender stalks Calyx-segments lanceolate, about 2 lines long, covered with hooked hairs. Corolla-tube as long as the calyx; lobes broad, as long as the tube. Stamens inserted in the throat, freely exserted. Style exserted *M. exarrhena*, F. v. M.

Common in many parts, particularly at considerable altitudes; also in New South Wales and Victoria. Fl. Dec.

2. CYNOGLOSSUM.

Calyx divided deeply. Corolla-tube short and broad, with 5 scales at orifice, lobes very spreading. Nuts 4, densely covered with bristles.

A widely-spread northern genus.

Leaves ovate, many-nerved . . ... 1. *C. latifolium.*

Leaves lanceolate, midrib distinct.
  Flowers white or yellow. Bracts present ... 2. *C. suaveolens.*
  Flowers blue. Bracts none ... ... 3. *C. australe.*

1. C. LATIFOLIUM, *R. Br.* A straggling perennial, obscurely scabrous. Lower leaves ovate, stalked, 1-2 inches long; stem-leaves smaller, narrower, and sessile. Flowers on slender stalks, forming a terminal, elongated, one-sided raceme or scorpioid cyme. Calyx-segments about 1 line long, rather broad. Corolla rather small, usually blue.

Circular Head; also in New South Wales, Victoria, and Queensland. Fl. spring and summer.

2. C. SUAVEOLENS, *R. Br.* Sub-erect, branching from a perennial stock, mostly 6-18 inches high. Leaves broadly or narrowly lanceolate, the lower ones stalked, and often 2-4 inches long; stem-leaves smaller and sessile, like all the green portions of the plant coarsely hairy. Inflorescence as in the last, but often branched. Each flower-stalk subtended by a bract. Calyx-segments ovate, lanceolate, about 1½ line long, less hairy than in *C. australe.* Corolla white or yellowish.

Very common; also in New South Wales, Victoria, South Australia, and Queensland. Fl. Nov.-Jan.

3. C. AUSTRALE, *R. Br.* Sub-erect and branched from a perennial stock, often 2 feet high, more or less coarsely hispid. Leaves broadly or narrowly lanceolate, lower ones stalked, often 4 inches long; stem-leaves smaller and sessile. Inflorescence similar to the last, but more elongated and branched, and without subtending bracts to the flowers. Calyx-segments also smaller, broader, less deeply divided, and more hirsute. Corolla blue or rarely white.

Common in dry or sandy places; also in New South Wales, Victoria, South Australia, and Queensland. Fl. Oct.-Dec.

3. LITHOSPERMUM.

Calyx divided nearly to the base. Corolla-tube cylindrical, without scales at orifice; lobes short, spreading. Stamens included. Nuts 4, hard and stony.

A common genus in the Northern Hemisphere. Represented in Tasmania by a widely-spread introduced species.

L. ARVENSE, *Linn.* An erect annual, more or less hairy. Leaves lanceolate, lower ones stalked, broad, obscurely toothed, 1-2 inches long; stem-leaves narrow, sessile. Flowers numerous, sessile, solitary in the axils. Calyx-segments linear, 2-3 lines long in the flower, enlarging to ½ inch subsequently. Corolla white, the tube about as long as the calyx. Nuts about 2 lines long, stony, pitted, and tuberculate. Fl. all spring and summer.

ORDER LIII.—*CONVOLVULACEÆ.*

Flowers regular. Calyx free from ovary. Sepals 5, usually free, rarely united. Corolla usually funnel-shaped, sometimes campanulate or tubular, with spreading lobes. Stamens 5, inserted in the corolla-tube. Ovary 2, 3, or 4-celled, or a similar number of partially-distinct carpels. Rarely dissepiment absent, and consequently 1-celled. Ovules 1 or 2 in each cell. Style single. Stigmatic branches 2, simple or bifid. Fruit capsular or succulent.

A very large order, found almost throughout the world.

Plant trailing or twining. Flowers funnel-shaped,
  conspicuous ... ... 1. *Convolvulus.*

Plant prostrate or sub-erect. Flowers with cylindrical corolla-tube and spreading lobes. Leaves ovate to linear	2. *Wilsonia.*
Plant creeping, tufted at nodes. Flowers campanulate. Leaves reniform	3. *Dichondra.*
Leafless parasite. Flowers campanulate	4. *Cuscuta.*

1. CONVOLVULUS

Corolla funnel-shaped, the apex of each petal prominent, otherwise margin entire. Ovary 2-celled, with 2 ovules in each. Style filiform, with 2 linear or ovate stigmatic lobes. Fruit a dry capsule.

A widely distributed genus, principally in temperate regions of both Hemispheres.

Bracts small, at a distance from calyx.	
Flowers pink. Leaves deeply divided	1. *C. erubescens.*
Flowers white or nearly so. Leaves angled ...	2. *C. arvensis.*
Bracts large, and enclosing the calyx.	
Leaves roughly triangular	3. *C. sepium.*
Leaves reniform, fleshy	4. *C. soldanella.*

1. C. ERUBESCENS, *Sims.* A small creeping or trailing perennial, seldom exceeding 1 or 1½ foot, usually more or less hirsute. Leaves very variable, lowest often ovate, passing from that as they advance along the branch to sagittate, pedate, linear with basal lobes to simple linear, often all simpler, mostly ¾-1½ inch long, on stalks as long as the laminæ. Flowers solitary, axillary, on stalks exceeding the leaves, and bearing two small linear bracts about the middle. Sepals about 3 lines long, ovate. Corolla pink or rarely white, about ¾ inch long.

Very common : also throughout Australia. Fl. spring and summer.

2. C. ARVENSIS, *Linn.* A perennial with a creeping rhizome, branches slender, trailing or climbing, from a few inches to 2 or 3 feet high, usually glabrous. Leaves more or less sagittate, the apex often rounded, 1-2 inches long, on stalks about same length. Flowers usually 2 together, on a common, slender, axillary peduncle. Bracts small, never approaching the calyx. Sepals about 2 lines long, ovate. Corolla white or pale pink, ¾-1 inch long.

Introduced. Very common in Europe and Northern Asia. Widely spread as a weed of cultivation. Fl. spring and summer

3. C. SEPIUM, *Linn.* Habit similar to the last, but a more vigorous climber, often attaining many feet. Leaves more or less triangular to sagittate, 2-4 inches long, stalked. Flowers solitary, axillary, on long slender stalks. Bracts large, ovate, close to and enclosing the calyx. Sepals lanceolate, 4-5 lines long. Corolla white or pale pink, 2-4 inches long. Stigmatic lobes oblong. Dissepiment of capsule deficient, leaving it 1-celled. *Calystegia sepium*, Hook.

Not uncommon in many parts. It occurs throughout extra-tropical Australia and New Zealand, and has a very wide distribution in the Northern Hemisphere

> This and the next, with about 10 or 12 other forms, are often treated as a distinct genus (*Calystegia*), on the strength of their more or less unilocular capsules, and the bracts being adjacent to and enclosing the calyx.

4. C. SOLDANELLA, *Linn.* Habit similar to the last, but the stems much shorter, trailing or climbing. Leaves fleshy, more or less reniform, with a tendency to become sagittate, mostly about 1 inch long, stalk exceeding the laminæ. Flowers stalked, solitary, axillary. Bracts ovate, obtuse, close to and

enclosing, but shorter than, the calyx. Sepals about $\frac{1}{2}$ inch long, ovate. Corolla pink to nearly purple, about 2 inches long. Stigmatic lobes narrow-oblong. Capsule 1-celled. *Calystegia soldanella*, Hook.

Circular Head, George's Bay, Port Sorell; also New South Wales, Victoria, and New Zealand. A common coast plant in the Northern Hemisphere. Considered by von Mueller to be a variety of *C. sepium*. Fl. spring and summer

2. WILSONIA.

Calyx of united sepals, shortly lobed. Corolla with a slender cylindrical tube and spreading lobes. Ovary 2-celled, or the dissepiment partially deficient, normally 1 ovule in each cell. Fruit capsular.

A purely Australian genus, and confined to the southern portion of that distribution.

Plant pubescent. Leaves under 2 lines, distichous... 1. *W. humilis.*
Plant glabrous. Leaves fleshy, linear, $\frac{1}{2}$-1 inch ... 2. *W. backhousii.*

1. W. HUMILIS, *R. Br.* A prostrate, somewhat rigid, under-scrub, with ascending branches, silky-pubescent (at least in the young parts), seldom exceeding 1 foot. Leaves ovate, crowded and overlapping on the branches, 1-2 lines long, usually distichous. Flowers solitary, terminal, sessile. Calyx about $2\frac{1}{2}$ lines long; lobes short. Corolla-tube rather shorter than the calyx; lobes about $1\frac{1}{2}$ line long, spreading. Anthers freely exserted (in all specimens I have examined). Style long, with 2 slender branches and globose stigmas. Capsule enclosed in the calyx, membranous, usually 1-seeded.

Swanport, in salt marshes; also in Victoria, South Australia, West Australia, and New South Wales. Fl. Dec.

2. W. BACKHOUSII, *Hook.* A small perennial, with prostrate or ascending stems from the stock, rarely above 6 inches high, quite glabrous, leaves broadly or narrowly linear, thick, fleshy, $\frac{1}{4}$ to nearly 1 inch long. Flowers solitary, sessile, axillary. Calyx about 3 lines long; lobes much shorter, and pubescent on the inner surface. Corolla-tube very slender, usually $\frac{1}{2}$ inch long in Tasmanian specimens; lobes about $1\frac{1}{2}$ line long. Stamens freely exserted. Style as in last.

Swanport, Kelvedon, near George's Bay; also extra-tropical Australia. Fl. Dec.

3. DICHONDRA.

Sepals united towards the base or nearly free. Corolla campanulate, deeply lobed. Ovary of 2 distinct carpels. Styles basal, free. Ovules 1 or 2 in each carpel. Fruit a membranous capsule, often only one of the carpels maturing.

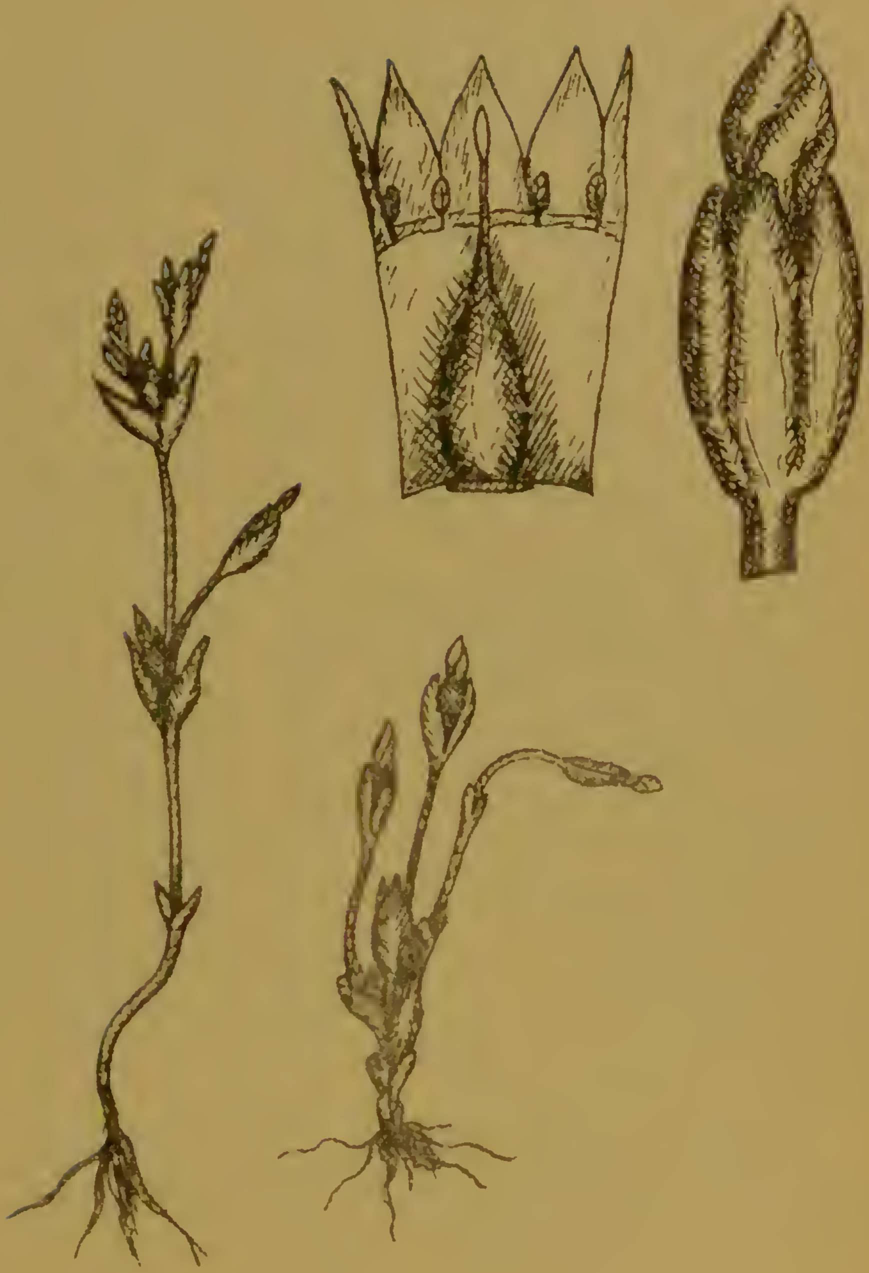
A very distinct genus, of but 2 species: one found in tropical America, the other widely distributed throughout tropical and most temperate districts.

D. REPENS, *Forst.* A perennial, with a creeping rhizome and tufts at intervals. Leaves mostly reniform, and notched at the apex, silky, $\frac{1}{2}$-2 inches diameter, on long stalks. Flowers solitary, on stalks shorter than the leaves, small and often hidden. Calyx silky, about 1 line long, divided nearly to the base. Corolla-tube shorter than the calyx; lobes spreading, white. Stamens inserted at the orifice of the tube. Carpels densely villous.

Very common in dry pastures and sandy places. Throughout Australia and all warm climates. Fl. spring and summer.

4. CUSCUTA.

Sepals free or united. Corolla more or less campanulate; lobes short, spreading. 4 or 5 scales, according to the number of corolla-lobes developed in



SEBÆA ALBIDIFLORA. *F. v. M.*

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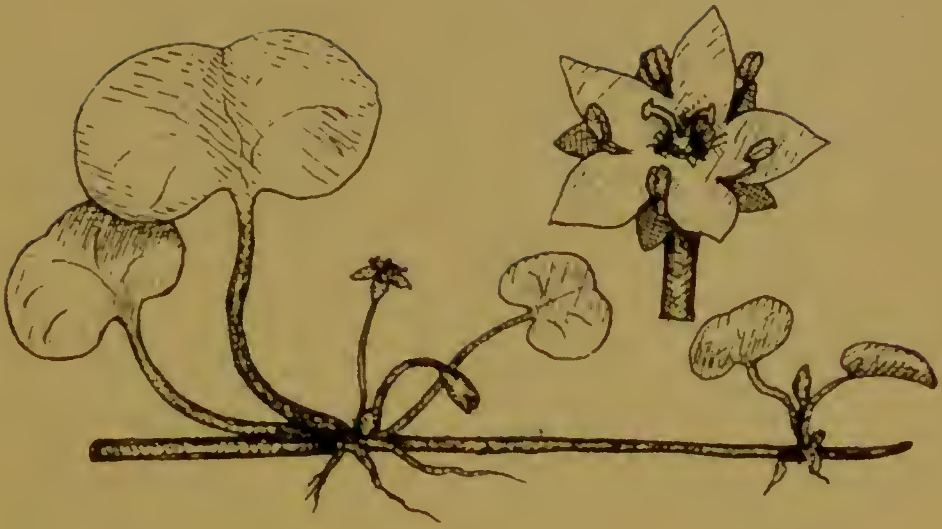
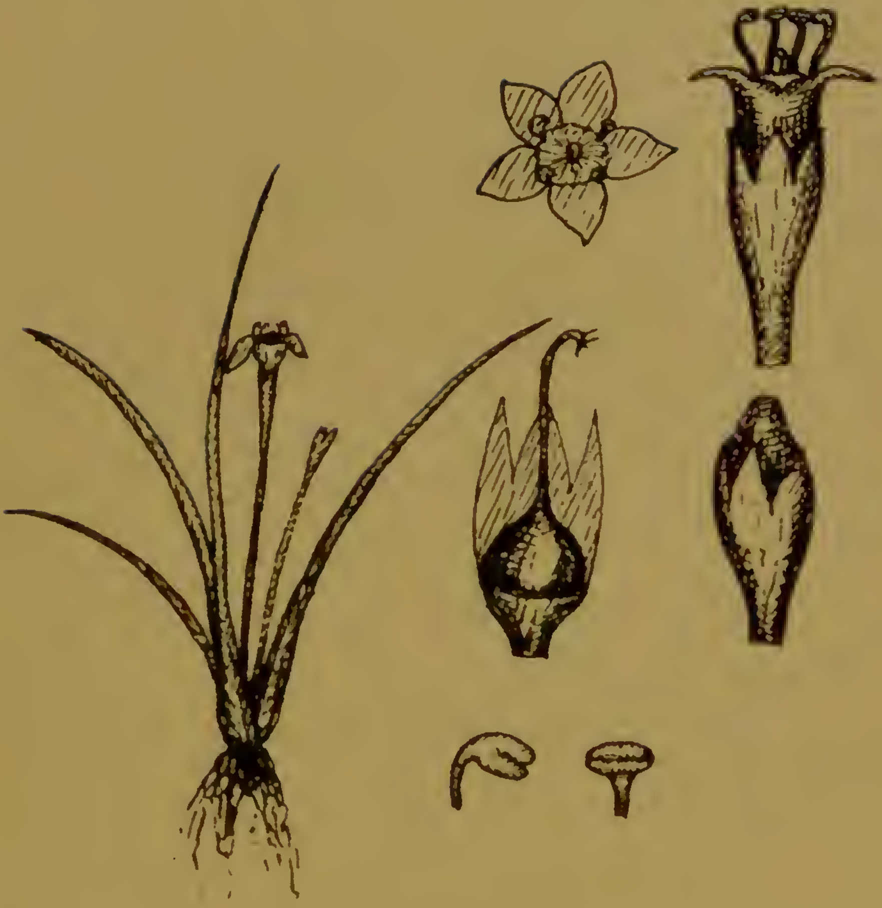


DICHONDRA REPENS. *Forst.*



LIMOSELLA AQUATICA. *L.*

[illegible] Government Printer, Tasmania

the tube below the stamens. Stamens with very short filaments inserted at the mouth of the tube. Ovary completely or partially 2-celled, with 2 ovules in each. Styles 2, distinct or united. Fruit capsular.

A rather large and widely-spread genus of leafless parasites. Found throughout tropical and temperate regions.

C. TASMANICA, *Engel.* Parasitic on the branches of many shrubs and small trees. Stems long, slender, numerous, forming an entangled growth. Leaves none. Flowers in nearly globular clusters, each one on a slender stalk from ¼-½ inch long. Calyx hardly ¾ line long, deeply lobed. Corolla not contracted at the throat, about 1½ line long; lobes obtuse, about as long as the tube. Styles distinct, nearly equal, with large capitate stigmas. *C. australis*, Hook.

Near Hobart, George Town; also Victoria and South Australia. Fl. summer.

ORDER LIV.—*SOLANACEÆ.*

Flowers regular or nearly so. Sepals united, with usually 5 lobes. Corolla gamopetalous, with usually 5 or rarely 4 short lobes. Stamens as many as the lobes of the corolla. Ovary normally 2-celled, sometimes developing more. Style simple, terminal. Ovules many. Placenta axile. Fruit a fleshy berry or dry capsule.

A large order of tropical plants, principally developed in South America. Only few genera extending to temperate climates.

SOLANUM.

Corolla broadly campanulate. Filaments short. Anthers erect, surrounding the style. Fruit a fleshy 2-celled berry.

Flowers small. Leaves under 2 inches ... ... 1. *S. nigrum.*
Flowers large. Leaves many inches ... ... 2. *S. aviculare.*

1. S. NIGRUM, *Linn.* A sub-erect, spreading, branched annual or biennial, 1-2 feet high. Leaves ovate, irregularly toothed or entire, 1-2 inches long, stalked. Flowers few together, in lateral umbels or cymes. Calyx short, broad; lobes distinct. Corolla about ¼ inch long, with recurved lobes nearly as long as the tube. Berry small, globular, black, red, or yellow.

Common in many parts. Possibly introduced. It occurs throughout Australia. Common in Europe, and spread as a weed of cultivation almost throughout the world. Fl. spring and summer.

2. S. AVICULARE, *Forst.* Erect, branched, and spreading, often attaining 5 or 6 feet, but flowering also when only a few inches. Leaves lanceolate, entire or with few lanceolate lobes chiefly towards their bases, tapering into a stalk or sessile, mostly 3-6 inches long. Flowers on rather long stalks, few together, in small, nearly terminal, irregular racemes. Calyx about 3 lines long; lobes very short. Corolla violet, blue, or purple, campanulate, about 1 inch long; lobes short, broad, erect. Filaments slightly exceeding the anthers. Berry globular, yellow, about 1 inch diameter, but variable.

Very common, chiefly in damp, shady places; also Eastern and Southern Australia. Fl. all summer.

> The species is very variable. I have taken the above description from the common Tasmanian form, which also approaches *S. vescum*, F. v. M.

ORDER LV.—*SCROPHULARIACEÆ.*

Flowers irregular, sometimes but slightly so. Sepals 5, united or free. Corolla gamopetalous; the lobes usually arranged in 2 lips, but in most

Tasmanian forms with usually 5 spreading, nearly equal, lobes. Stamens usually 2 or 4, when a fifth is present often imperfect or only a filament, when 2 only the rudiments of the other pair often present. Ovary 2-celled, with several ovules in each. Placenta axile. Style simple. Stigma 2-lobed, rarely entire. Fruit a 2-celled capsule, rarely succulent.

A very large order, of diverse forms. Closely allied to *Solanaceæ*. Its distribution is world-wide.

Flowers nearly regular.
Flowers minute. Leaves mostly linear. Mud plants.
Leaves opposite. Plant creeping ... ... 5. *Glossostigma.*
Leaves tufted or alternate... ... ... 6. *Limosella.*
Flowers conspicuous.
Flowers yellow, ½ inch long. Stamens 4. Shrub 1. *Anthocercis.*
Flowers blue or white, ¼ inch long. Stamens 2 7. *Veronica.*
Flowers white, ½ inch long. Stamens 4. Herb 8. *Ourisia.*
Flowers distinctly irregular.
Flowers solitary or few together.
Flowers large, purple. Stamens 4.
Leaves scattered. Peduncle short ... ... 2. *Mimulus.*
Leaves tufted. Peduncle long... ... ... 3. *Mazus.*
Flowers whitish, nearly sessile. Stamens 2 ... 4. *Gratiola.*
Flowers numerous, in terminal spikes ... ... 9. *Euphrasia.*

1. ANTHOCERCIS.

Sepals united; lobes long or short. Corolla tubular below; lobes spreading, nearly equal. Stamens 4, one pair longer than the other, a rudiment of a fifth often present. Fruit capsular.

A purely Australian genus, of about 18 species. Only one, and that endemic, is found in Tasmania. Often placed in *Solanaceæ*.

A. TASMANICA, *Hook.* An erect shrub, often attaining many feet, most parts lightly clothed with stellate hairs. Leaves oblong, entire, contracted into a short stalk, margins usually recurved, ½-1½ inch long. Flowers few together, in axillary racemes towards the ends of the branches. Calyx about 3 lines long; lobes linear, rather longer than the tube. Corolla ½-¾ inch long; lobes linear, spreading, rather longer than the tube, cream-coloured, tube often lined with purple. Capsule enclosed in the calyx, nearly globular.

In many parts on the East Coast. Fl. Sept.-Dec.

2. MIMULUS.

Sepals united nearly to the apex, with prominent angles at their junctions. Corolla tubular at the base, limb irregular, 2-lipped; upper lip erect or spreading, 2-lobed; lower lip spreading, 3-lobed; all the lobes broad and rounded. Stamens 4.

The genus is widely distributed in the temperate regions of both Hemispheres.

M. REPENS, *R. Br.* A small perennial, creeping in mud, and sending up ascending or erect branches. Leaves opposite, sessile or nearly so, ovate or oblong, mostly about ¼ inch long. Flowers solitary, axillary, on short but lengthening stalks. Calyx about 2½ lines long; lobes very short and tooth-like. Corolla large for the size of the plant, purple with a yellow centre, ½-¾ inch long. Capsule enclosed in the calyx, nearly globular.

Very common in saline swamps and muddy places; also throughout extra-tropical Australia and New Zealand. Fl. spring and summer.

3. MAZUS.

Sepals united for about half their length. Corolla tubular at the base, limb irregular, 2-lipped; upper lip erect, bifid; lower lip 3-lobed, larger, spreading. Stamens 4.

A small genus, confined to part of Asia (chiefly eastern), and to Australia and New Zealand.

M. PUMILIO, *R. Br.* A small tufted perennial, with a creeping rhizome. Leaves in tufts at the nodes, obovate to spathulate, narrowed to a stalk below, sinuate-toothed on the margin, from ½-2 inches long. Flowers solitary or 2 or 3 together, on a short or long erect stalk. Calyx about 2 lines long. Corolla 4-6 lines long. Capsule nearly globular.

Common in wet places; also in Southern and Eastern Australia and New Zealand. Fl. spring and summer.

4. GRATIOLA.

Sepals 5, nearly or quite free. Corolla tubular at the base, limb irregular, 2-lipped; upper lip broad, entire, or shortly 2-lobed; lower lip 3-lobed. Stamens 2, anthers cohering; usually also 2 rudimentary stamens present. Capsule 4-valved. Leaves opposite.

A small genus, dispersed over temperate regions of both Hemispheres.

Leaves ½-1 inch, broad at base	1. *G. peruviana.*
Leaves about ¼ inch, narrow at base	2. *G. nana.*

1. G. PERUVIANA, *Linn.* A small perennial, with a creeping base and sub-erect stems, often 6 inches to 1 foot high. Leaves broadly ovate to lanceolate, sessile, margin more or less toothed, mostly ½-1 inch. Flowers sessile or nearly so, in the upper axils, usually numerous, white or pink. Sepals narrow-lanceolate, nearly 3 lines long. Corolla-tube nearly ½ inch long, narrow; lobes short and broad. Anthers more or less adhering to one another; 2 imperfect stamens are also developed, consisting of slender filaments only, but sometimes, when well developed, with small heads. *G. pubescens* and *G. latifolia*, Hook.

Common in many parts in wet places. Almost throughout Australia. Extends to New Zealand and South America. Fl. summer.

2. G. NANA, *Benth.* A small perennial, creeping in mud, rarely ascending, seldom exceeding very few inches. Leaves oblong, narrowed at the base, usually toothed on the margin, about a ¼ inch long. Flowers shortly stalked, in the axils, white or pink. Sepals lanceolate, about 2 lines long. Corolla-tube about 4 lines long; lobes short and broad.

Common in many swampy places, principally at a considerable altitude. It occurs in Victoria, and also in New Zealand. Fl. spring and summer.

5. GLOSSOSTIGMA.

Sepals united, 3 or 4; lobes usually short. Corolla small, with a short tube, and 5 nearly equal lobes. Stamens 2 or 4. Style short, dilated into a broad flat stigma. Capsule nearly globular.

The genus is confined to 3 doubtfully distinct species. Its distribution extends to tropical Asia and Africa on the one side, and New Zealand on the other.

G. ELATINOIDES, *B.* A small creeping plant, usually forming moss-like patches. Leaves linear to oblong, narrowed into a stalk, opposite, but sometimes clustered at the nodes, mostly 2-3 lines long. Flowers shortly stalked, axillary. Calyx under 1 line long; lobes 4, short, broad. Corolla-tube rather shorter than the calyx; lobes short, ciliated on the margin. Stamens 4, short.

South Esk River, Clyde Vale; Bass Strait; also in New South Wales and Victoria. It extends to New Zealand. Fl. spring and summer.

6. LIMOSELLA.

Sepals 5, combined; lobes about as long as the tube. Corolla-tube short and broad; lobes 5, nearly equal. Stamens 4. Ovary incompletely 2-celled, the dissepiment deficient towards the top. Capsule globular.

A genus of 2 or 3 species. The Tasmanian plant is common throughout the Northern Hemisphere.

L. AQUATICA, *Linn.* A small tufted annual, sometimes creeping. Leaves usually clustered, but alternate when a branch is formed, linear, and about $\frac{1}{2}$-1 inch long in common Tasmanian form, mostly oblong and narrowed into a long stalk in the European variety. Flowers small, usually 1 or 2 in each tuft, on stalks shorter than the leaves. Calyx about 1 line long. Corolla-tube rather longer than the calyx: lobes spreading. Style rather long. Stigma small, round. Capsule ovoid, exceeding the persistent calyx.

Common in marshy situations; also throughout extra-tropical Australia. Fl. spring.

7. VERONICA.

Sepals usually 4, rarely 5, joined only towards their base. Corolla-tube usually very short; lobes 4, rarely 5, spreading, nearly equal. Stamens 2. Capsule usually flattened, and notched in the centre. Leaves opposite.

A very large genus, found principally in temperate climates, but extending into the tropics. Its distribution is world-wide, but most Australian forms are endemic.

- Flowers clustered in racemes towards the ends of the branches.
  - Shrub or tall perennial.
    - Leaves oblong to lanceolate, $\frac{1}{4}$-$\frac{3}{4}$ inch ... ... 1. *V. formosa.*
    - Leaves ovate-lanceolate, 2-4 inches ... ... 2. *V. derwentia.*
  - Ascending or sub-erect perennial.
    - Leaves divided into linear segments ... ... 3. *V. nivea.*
    - Leaves linear or nearly so ... ... 4. *V. gracilis.*
    - Leaves ovate to lanceolate.
      - Leaves sessile or nearly so ... ... 5. *V. distans.*
      - Leaves distinctly stalked.
        - Leaves broadly ovate, $\frac{1}{2}$-1 inch, rarely longer.
          - Hirsute, capsule notched ... ... 6. *V. calycina.*
          - Pubescent, capsule hardly notched ... 7. *V. plebeja.*
        - Leaves broadly lanceolate, 1-3 inches ... 8. *V. notabilis.*
- Flowers solitary in the axils.
  - Flowers shortly stalked, forming leafy racemes ... 9. *V. serpillifolia.*
  - Flowers on long stalks, scattered ... ... 10. *V. agrestis.*

1. V. FORMOSA, *R. Br.* An erect, much-branched, and spreading shrub, usually 2-3 feet high, sometimes more. Leaves decussate, narrow-oblong to lanceolate, often recurved, $\frac{1}{4}$-$\frac{3}{4}$ inch long. Flowers various shades of light blue, in numerous loose racemes towards the ends of the branches. Calyx about 1 line long, divided nearly to the base into 5 oblong lobes. Corolla 4-lobed, the lower lobe rather narrower than the others. Tube short. Capsule ovate, swollen, about $2\frac{1}{2}$ lines long.

Very common, chiefly in rocky or hilly situations. Fl. Sept.-Nov.

2. V. DERWENTIA, *Andr.* An erect unbranched perennial, often 4 feet high. Leaves sessile, lanceolate, but with a broad base, serrate, often 3 inches long. Flowers pale blue or nearly white, numerous, on much-elongated racemes towards the ends of the branches. Calyx rather more than 1 line long, 4-lobed. Corolla 4-lobed. Capsule ovate, about 4 lines long. *V. labiata*, Hook.

Common in most parts of the Island It occurs also throughout South-Eastern Australia. Fl. Nov.-Dec.

3. V. NIVEA, *Lindl.* An ascending or sub-erect perennial, ½-1½ foot high. Leaves divided into many, usually simple, linear lobes, mostly ½-1½ inch long. Flowers in numerous, rather elongated and loose, racemes towards the ends of the branches. Calyx about 1½ line long, less deeply divided than in most species; lobes 4, oblong. Corolla pale blue, tube very short; lobes about 2 lines long, one narrower than the other three. Capsule compressed, notched in the centre, about twice as long as the calyx.

Common on most mountains; also in Victoria and New South Wales. Fl. Sept.-Jan.

4. V. GRACILIS, *R. Br.* Rootstock creeping; stems erect or ascending, slender, not much branched, 2-18 inches high. Leaves linear-lanceolate, opposite, sessile or nearly so, acute, entire or with few acute teeth, ½-1 inch long. Flowers few, in small loose racemes towards the ends of the stems. Calyx nearly 3 lines long, divided nearly to the base into 4 oblong acute lobes. Corolla blue, about 3 lines long; lobes nearly equal, broad. Capsule compressed, slightly notched, much shorter than the calyx.

Common in pastures and shaded places. It occurs also in New South Wales, Victoria, and South Australia. Fl. Oct.-Jan.

5 V. DISTANS, var. *pubescens*, *R. Br.* Rootstock creeping; stems erect or ascending, not much-branched, 2-6 inches high. Leaves ovate, sessile or nearly so, margin with few teeth or nearly entire, ½-1 inch long. Flowers towards the ends of the branches. Calyx nearly 3 lines long, with rather broad lobes. Corolla white or pale blue, 4-5 lines long; lobes broad, nearly equal. Capsule compressed, distinctly notched in the centre, as long as the calyx.

Recherche Bay, Circular Head; also in South Australia, West Australia, and Victoria. Fl. Nov.-Jan.

The Tasmanian form departs from the type, and approaches *V. calycina* in the structure of the leaves, but has larger petals.

6. V. CALYCINA, *R. Br.* Stems erect, or decumbent and rooting, more hirsute than its allies, from a few inches to 1 foot long. Leaves distinctly stalked, broadly ovate, coarsely toothed, mostly ½-1 inch long, occasionally still longer. Flowers few, in small loose racemes, mostly towards the ends of the stems. Calyx nearly 3 lines long, split nearly to the base into 4, rather broad, obtuse segments, enlarging after flowering. Corolla pale blue, 2-3 lines long; lobes nearly equal. Capsule compressed, slightly notched, about 2 lines long.

Common in many situations, in good or poor land, or in sand. It occurs throughout Australia. Fl. Oct.-April.

The species is variable, and runs almost into its immediate allies.

7. V. PLEBEJA, *R. Br.* Rootstock creeping; stems procumbent, long and slender, sometimes rooting and extending to several feet. Leaves broadly ovate, on long stalks, margin with bold acute teeth, mostly ½-1 inch long. Flowers few, in small loose racemes towards the ends of the branches. Calyx about 2 lines long, rather longer round the fruit. Corolla slightly exceeding the calyx. Capsule compressed, not notched above, about 2 lines long.

Swanport, Macquarie Harbour; also in Queensland, New South Wales, Victoria, and New Zealand. Fl. Nov.-Jan.

8. V. NOTABILIS, *F. v. M.* Rootstock slightly creeping; stems erect or ascending, often exceeding 1 foot. Leaves ovate-lanceolate to lanceolate, stalked, acute, margin boldly and rather regularly toothed, 1-3 inches long. Flowers few, in rather loose, often elongated, racemes, towards the ends of the stems. Calyx split nearly to the base into 4 ovate segments, under 3 lines when in flower, quite 4 lines long when in fruit. Corolla hardly exceeding the calyx, nearly white, streaked with purple. Capsule compressed, slightly notched, much shorter than the calyx. *V. arguta*, Hook.

St. Patrick River; also in New South Wales, Victoria, and Queensland. Fl. Oct.-Nov.

9. V. SERPILLIFOLIA, *Linn.* A small perennial, with creeping much-branched stems and ascending flowering branches, usually 3 or 4 inches high, the Tasmanian form minutely pubescent. Leaves oblong, obtuse, opposite, shortly stalked, obscurely toothed, mostly about ½ inch long; floral-leaves narrower, alternate. Flowers small, pale blue or white, streaked with dark blue or purple, few or many, in simple, terminal, leafy racemes. Flower-stalks short to 3 lines long. Calyx about 1 line long, split nearly to the base into 4 oblong obtuse lobes. Corolla hardly exceeding the calyx. Capsule compressed, conspicuously notched, about as long as the calyx.

Mount Wellington at highest point of Huon Road, Port Esperance, Zeehan, George's Bay. Probably widely spread. Possibly introduced. It also occurs in New South Wales and Victoria. A common plant in temperate regions of both Hemispheres. Fl. Sept.-Feb.

10. V. AGRESTIS, *Linn.* A procumbent, widely-spreading, much-branched annual, softly pubescent. Leaves broadly ovate, boldly toothed, about ½-¾ inch long, on stalks of a few lines, lower ones opposite, upper ones alternate. Flowers numerous, solitary, in the axils of the alternate leaves, on slender stalks usually nearly as long as the leaves. Calyx about 2 lines long, divided nearly to the base into 4 ovate lobes. Corolla blue or whitish, about as long as the calyx. Capsule compressed, notched, nearly as long as the calyx.

Introduced. A widely-spread weed of cultivation. Distributed throughout northern temperate regions. Fl. spring and summer.

8. OURISIA.

Calyx deeply 5-lobed. Corolla nearly regular, tube usually short; lobes 5, usually spreading. Stamens 4. Anthers cohering. Capsule ovate.

A South American and New Zealand genus. The only Tasmanian, which is the solitary Australian, representative of the genus is endemic.

O. INTEGRIFOLIA, *R. Br.* A small creeping perennial, rooting at the nodes, the flowering branches ascending, quite glabrous. Leaves thick, ovate to nearly orbicular, ¼-½ inch long, on stalks often twice as long. Flowering-stem erect, simple, with usually two pairs or whorls of small leaves or bracts at intervals, 2-6 inches high. Flower solitary. Calyx 2-3 lines long; lobes broad. Corolla white, streaked, ½ inch long, tube short; lobes unequal, obtuse. Capsule broadly ovate, nearly as long as the enlarged calyx.

Common on mountains. Fl. Dec.

9. EUPHRASIA.

Calyx tubular, 4-lobed. Corolla very irregular, tubular below the lobes, arranged in two lips; upper lip hood-shaped, 2-lobed; lower lip spreading, 3-lobed. Stamens 4, in pairs. Anthers cohering. Capsule oblong, compressed.

A small genus, widely distributed in temperate portions of both Hemispheres.

Flowers yellow. Plant roughly pubescent .. ... 2. *E. scabra.*
Flowers white to purple, pubescent or glabrous.
Leaves shortly lobed to entire .. . 1. *E. brownii.*
Leaves lobed to the middle . ... 3. *E. cuspidata.*

1. E. BROWNII, *F. v. M.* Stems usually numerous, erect from a perennial base, mostly about 1 foot high, glandular-pubescent in the typical form. Leaves oblong to linear-cuneate, all but a few lower ones sessile, rarely entire, mostly with few obtuse teeth chiefly at their ends, seldom exceeding ½ inch, generally much shorter. Flowers in pairs, in elongating, terminal, leafy spikes. Calyx 2-3 lines long; lobes broad, usually shorter than the tube. Corolla white to purple, often tinged inside with yellow, varying from under ⅓ to over ¾ inch long. Anthers hairy. Capsule ovate, exceeding the calyx. *E. collina*, Hook.; *E. multicaulis*, Hook.

Common throughout the Island, the two varieties occurring on most mountains; also throughout extra-tropical Australia. Fl. Sept.-Feb.

The species is very variable. Some forms appear distinct, but do not differ except in size and colour of corolla. I have preferred to follow von Mueller in considering them varieties of one type. The following are often considered distinct:—

Var. *alpina.* Flowers rather large, white to pale purple. Anthers very hairy. *E. alpina*, R. Br.

Var. *striata.* Smaller than the type. Flowers rather small, white, variously streaked with purple. *E. striata*, R. Br.

2. E. SCABRA, *R. Br.* A small, erect, simple or slightly-branched annual, mostly 6-12 inches high, covered with very short coarse hairs. Leaves narrow, with few short lobes, the upper ones nearly entire, about ¼ inch long. Flowers in pairs, in elongating, terminal, leafy spikes. Calyx 2-3 lines long; lobes narrow, acute, nearly as long as the tube. Corolla yellow, tube rather long, about twice as long as the calyx; lobes short and not spreading. Anthers very spreading. Capsule narrow-oblong, exceeding the calyx.

North Coast, George's Bay, Cheshunt, near Hamilton; on dry hills near Hobart. Probably common in many parts but overlooked. It occurs throughout extra-tropical Australia. Fl. Nov.-Feb.

3. E. CUSPIDATA, *Hook.* A small, erect, simple or slightly-branched annual, 2-4 inches high, usually glabrous. Leaves rather broad, divided nearly to the middle into 4-8 lobes. Flowers in short, dense, terminal, leafy spikes. Calyx 3-4 lines long; lobes acute, nearly as long as the tube. Corolla-tube rather shorter than the calyx; lobes nearly as long as the tube. Anthers glabrous or nearly so. Capsule oblong, shorter than the calyx.

Mount Sorell, Mount La Perouse, &c. Widely spread, but not common. Fl. Dec.

The following plants belonging to this order have been introduced from Europe, and threaten to become established:—

VERONICA PEREGRINA, *Linn.* Similar in habit to *V. serpyllifolia.* Flowers sessile in the axils. Corolla not exceeding the calyx. Capsule as broad as long, compressed, slightly notched.

MIMULUS MOSCHATUS, *Linn.* Depressed. Leaves oblong, delicately hairy, about 1 inch. Flowers solitary, axillary, nearly regular, yellow, smelling strongly of musk.

LINARIA VULGARIS, *Moench.* Erect, 1-2 feet. Leaves linear. Flowers numerous, yellow, 2-lipped, spurred.

Linaria spuria, *Mill.* Decumbent, 2-10 inches, slender. Leaves broadly ovate, hairy. Flowers solitary, axillary, stalked. Corolla 3 lines long, yellowish, 2-lipped, spurred.

Verbascum thapsus, *Linn.* Stout erect herb, 2-4 feet. Leaves oblong, hairy, 6 inches to 1 foot. Flowers very numerous along the stem, yellow, nearly regular, about 1 inch diameter.

Verbascum blattaria, *Linn.* Similar to the last, only smaller and less hairy. Inflorescence looser. Flowers yellow or white.

Order LVI. *LENTIBULACEÆ.*

Flowers irregular. Calyx 2 or 4-lobed. Corolla-tube short, usually spurred; lobes arranged in two lips. Stamens 2, short, inserted in the corolla-tube. Ovary superior, 1-celled, with several ovules on a free central placenta. Fruit a capsule.

A small order, of few genera, found throughout the world.

Calyx 2-lobed ... ... 1. *Utricularia.*
Calyx 4-lobed ... ... 2. *Polypompholyx.*

1. UTRICULARIA.

Corolla with a broad, short, erect upper lip, entire or 2-lobed, and a much longer, broader, spreading lower lobe. Calyx deeply divided into 2 lobes.

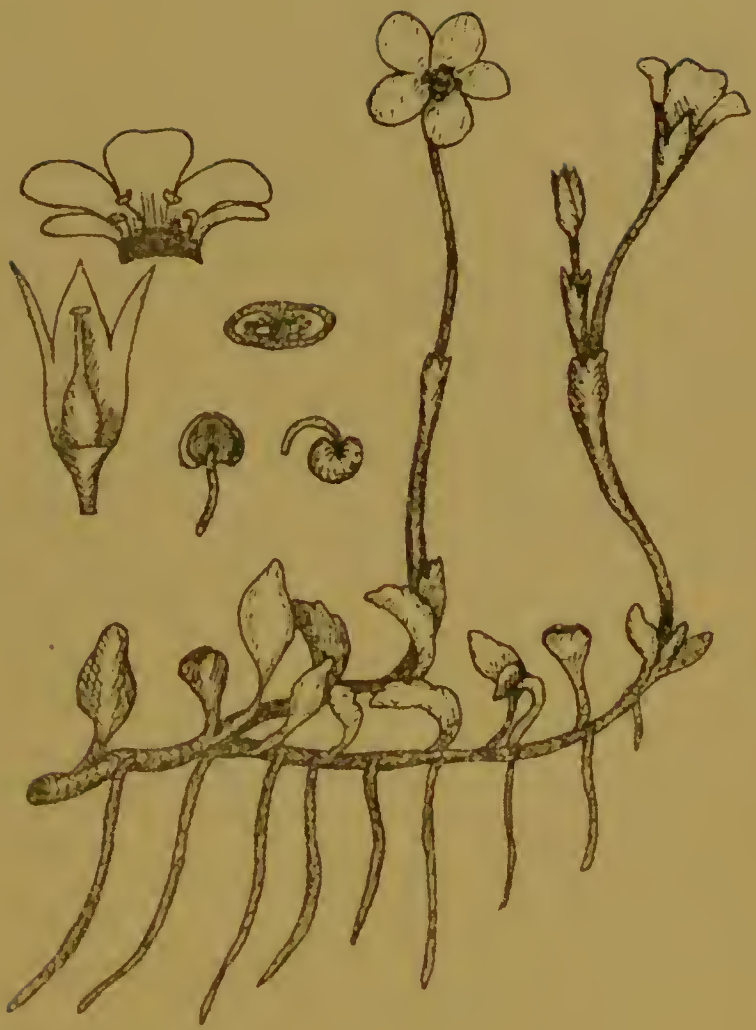
The genus is large, and has a distribution corresponding with the order. The species are all marsh or water plants, and are remarkable for the leaves on the rhizomes often becoming developed as utricles.

Corolla about $\frac{1}{2}$ inch in diameter.
Plant floating. Corolla yellow .. .. 1. *U. flexuosa.*
Marsh plant. Corolla purple or white ... ... 2. *U. dichotoma.*
Corolla about $\frac{1}{4}$ inch in diameter.
Flowers seldom solitary. Spur about as long as lip ... ... 3. *U. lateriflora.*
Flowers solitary. Spur half as long as lower lip .. 4. *U. monanthos.*

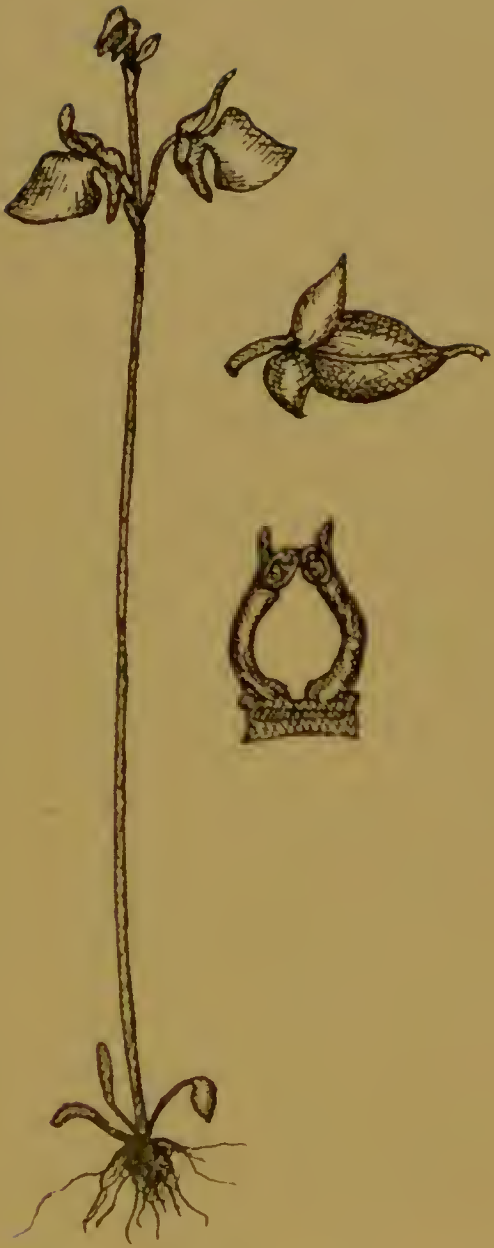
1. U. flexuosa, *Vahl.* Plant floating, stems submerged, branched, and widely spread. Leaves with thread-like lobes, some root-like, others bearing utricles. Flowering-stems simple, erect, bearing 3-6 flowers in a raceme. Corolla yellow; upper lip short, ovate; lower lip broad, spreading, about $\frac{1}{2}$ inch diameter, bearing a thickened centre above and a curved spur beneath. *U. australis*, Hook.

South Esk and Derwent Rivers. It occurs throughout Australia. A common plant in tropical Asia. Fl Nov.-Jan.

2. U. dichotoma, *Lab.* A creeping or tufted marsh plant. Leaves usually few, $\frac{1}{4}$-$\frac{1}{2}$ inch long, spathulate at the base of the flowering-stem, but when in water elongating rhizomes are formed, bearing numerous spathulate leaves often 1-2 inches long, together with well-formed globular utricles of about 2 lines diameter. Flower-stem simple, mostly 3-6 inches long, bearing 1-4 flowers, when more than 1 arranged in pairs, when 3 the upper one terminal, the flowers then appearing whorled. Flower-stalks slender, mostly under $\frac{1}{2}$ inch long, with 2 or 3 small bracts at their base. Calyx-segments about 2 lines long, broad, the lower one nearly orbicular. Corolla with a small, erect, usually entire, upper lip, and a broad, spreading, lower lip $\frac{1}{2}$-$\frac{3}{4}$ inch diameter, with a thickened central plate and a descending spur. Colour usually purple, occasionally white, the central



OURISIA INTEGRIFOLIA. *R. B.*



UTRICULARIA DICHOTOMA. *Lab.*

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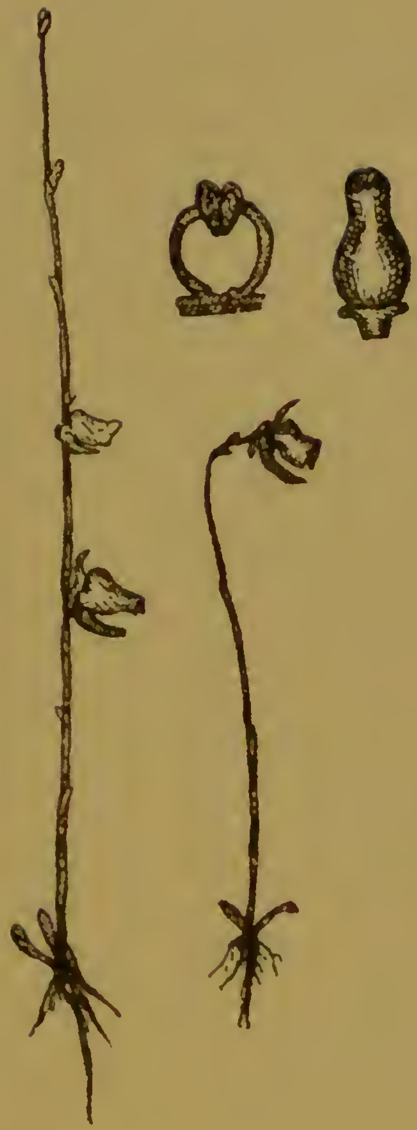


UTRICULARIA LATERIFLORA. *R. Br*

[illegible]

plate always yellow. Stamens very short, the filaments embracing the style, and the anthers cohering.

Common in wet heaths. It also occurs in New South Wales, Victoria, South Australia, and Queensland. Fl. Dec.

> The 1-flowered form has been described as a distinct species. *U. uniflora*, Hook.

3. U. LATERIFLORA. *R. Br.* Flowering-stem simple, slender, erect, 2-4 inches high. Leaves few, at the base of the stem, spathulate, mostly about 2 lines long. Flowering-stem bearing 2 or 3 minute, empty, distant bracts, besides those subtending the flowers. Flowers nearly sessile, usually 3-6, solitary at intervals along the stem, but often only 1, and then terminal. Calyx-lobes about 1 line long, obtuse. Corolla lilac to purple, about 3 lines long; upper lip narrow, erect, about 1-1½ line long; lower lip directed forwards, ending abruptly, raised in the centre, and bearing a conical spur beneath (running forwards, and as long as the lip). Stamens short. Anthers connate in front of the very short style.

Common on wet heaths in numerous localities; also in New South Wales, South Australia, Victoria, and Queensland. Fl. Dec.-Feb.

4. U. MONANTHOS. *Hook.* Flower-stem slender, about 1 inch high. Leaves minute, linear-spathulate, few, at the base of the stem. Flower solitary, subtended by a minute bract. Calyx-lobes broad, obtuse, about ¾ line long. Corolla about 3 lines long; upper lip narrow, erect; lower lip broad, semicircular, raised in the centre, and bearing a rather short spur beneath.

Mount Field, sandy ground near Lake Arthur, Buckland. It occurs also in New Zealand. Fl. Dec.-Jan.

2. POLYPOMPHOLYX.

Calyx 4-lobed nearly to the base; 2 lobes large, and arranged above and below the corolla, as in *Utricularia*, the other 2 smaller and lateral. Corolla as in the last genus.

A genus of 2 species. Marsh plants, and only differing from *Utricularia* in the 4-segmented calyx.

P. TENELLA. *Lehm.* Flowering-stem simple, slender, 1-3 inches high. Leaves few, linear-spathulate, at the base of the stem. Flowers solitary or 2. Calyx about ¾ line long. Segments broad, obtuse. Corolla with an erect upper lip divided deeply into 2 narrow lobes, and a lower lip spreading, about 3 lines diameter with 3 obtuse lobes, spur broadly conical and as long as the lower lip.

Bass Straits; also throughout Southern Australia. Fl. Dec.-Jan.

ORDER LVII.—*MYOPORACEÆ.*

Flowers irregular, sometimes only slightly so. Calyx of combined sepals, usually 5-lobed. Corolla mostly 5-lobed, rarely 4 or more, often the lobes forming two lips. Stamens usually 4, inserted in the corolla-tube. Ovary free from the calyx, not lobed, 2-celled, with usually very prominent axile placentas that appear to divide each cell through the middle. Ovules 2 in each cell, one occupying each half-cell, pendulous. Style simple. Fruit drupaceous, but the mesocarp often thin.

A small order, closely allied to *Verbenaceæ*. Confined to tropical and temperate Southern Hemisphere; chiefly Australian.

MYOPORUM.

Calyx divided to the middle or deeper, 5-lobed. Corolla-tube usually short; lobes 5, nearly regular, spreading. Stamens 4, rarely 5 all equal. Ovary

2-celled, but often appearing 3 or 4-celled by the prominence of the placenta; in some species the ovary is further divided into 5 or 6 cells.

The genus spreads from the Pacific and Australia to the Indian Archipelago and tropical Africa.

Leaves lanceolate to oblong	1. *M. serratum.*
Leaves narrow to linear	2. *M. parvifolium.*

1. M. SERRATUM, *R. Br.* A most variable plant in both habit and details. Erect, but usually widely-spreading, shrub, generally 8-10 feet high. Leaves various modifications of oblong or obovate to lanceolate, mostly toothed towards the apex and contracted into a short stalk below, but sometimes quite entire, thick, alternate, mostly about 2 inches long, but varying from ½-4 inches. Flowers in small axillary clusters, small and variable in size. Calyx-lobes narrow, mostly 1-1½ line long. Corolla-tube about 1 line long, dilating upwards; lobes slightly longer, nearly orbicular, spreading, the whole white, marked with pale purple, and more or less hairy inside. Stamens 4, not protruding. Ovary 1 line long, oblong. Style as long as the ovary, with a capitate stigma, cells mostly 3, sometimes 2 or 4. *M. tasmanicum*, Hook.; *M. insulare*, R. Br.

Common on coasts, except towards the west; also throughout extra-tropical Australia. Fl. midsummer.

Many varieties have been treated as distinct species. The common Tasmanian form has obovate to oblong leaves and a 2-celled ovary, and is usually referred to as var. *obovatum*, or *M. adscendens*, R. Br.

2. M. PARVIFOLIUM, *R. Br.* A small procumbent shrub, of few feet growth. Leaves linear to narrow-spathulate, entire, thick, contracted at the base, alternate, ½-1 inch long. Flowers solitary or very few together, in the axils, small. Calyx-lobes about 1½ line long. Corolla-tube expanding, about 1 line long; lobes broad, as long as the tube, seldom hairy inside. Stamens 4, rather prominent. Ovary 3 or 4-celled, with one ovule in each. Fruit fleshy, about 2 lines diameter. *M. humile*, R. Br.

Flinders Island; also in Victoria, South Australia, Western Australia, and New South Wales. Fl. Dec.

VERBENACEÆ (alien).

Flowers irregular or regular. Calyx of combined sepals. Corolla 4-5 or 6-8-lobed. Stamens usually 4, equal, and inserted into the corolla-tube, rarely more. Ovary 2-celled, but the cells often divided down the middle, each division containing 1 ovule. Style terminal, simple. Fruit usually dry, often more or less separating into 1-seeded portions.

A very large order, of very wide distribution.

VERBENA.

Calyx 5-toothed. Corolla-tube distinct; lobes 5, spreading, unequal. Stamens included in the tube. Ovary 4-celled, with 1 ovule in each. Fruit readily separating into 4 1-seeded nuts.

The genus is almost confined to America. The only Tasmanian representative has an excessively wide distribution in Europe and Asia.

V. OFFICINALIS, *Linn.* An erect perennial, 1-2 feet high, sparely branched. Leaves opposite; lower ones stalked, oblong, toothed; upper ones sessile, usually simpler. Flowers small, in terminal elongating spikes. Calyx about 1 line long. Corolla nearly 3 lines long; the lobes as long as the tube

Introduced, but widely spread. Queensland, New South Wales, Victoria, and South Australia. Fl. Nov.-Jan.

ORDER LVIII.—*LABIATÆ.*

Flowers irregular. Calyx persistent, 5-toothed or 2-lipped. Corolla-tube distinct; lobes 4 or 5, usually arranged in 2 lips. Stamens 2 or 4, inserted in the tube of the corolla. Ovary 4-lobed, with 1 erect ovule in each. Style simple, and arising between the ovarian lobes and towards their base. Fruit 4 small 1-seeded nuts. Leaves opposite or whorled.

Distribution world-wide

Flowers in close clusters in the axils of the ordinary foliage-leaves. Herbs.
  Corolla nearly equal, 4-lobed
    Stamens 4 ... ... 1. *Mentha.*
    Stamens 2 ... ... 2. *Lycopus.*
  Corolla very irregular.
    Upper lobe distinct, erect.
      Calyx with 10 recurved teeth. Flower white 5. *Marrubium.*
      Calyx with 5 erect teeth. Flower red-purple ... 6. *Stachys.*
    Upper lobe hardly noticeable. Flower blue ... 11. *Ajuga.*
Flowers solitary in the axils of the ordinary foliage-leaves.
  Herb . ... 4. *Scutellaria.*
  Shrubs.
    Leaves opposite ... ... 7. *Prostanthera.*
    Leaves in whorls of 4-6 ... ... 8. *Westringia.*
Flowers in numerous axillary clusters, condensed at ends of branches, purple ... ... 3. *Prunella.*
Flowers in numerous small dense racemes towards the ends of branches, white ... . 9. *Nepeta.*
Flowers in numerous small loose racemes towards the ends of branches, white. Tall herb. Stem square... 10. *Teucrium.*
Flowers in small or large racemes, white and purple. Stem round. Shrubs ... ... 7. *Prostanthera.*

1. MENTHA.

Calyx 5-toothed. Corolla-tube short; lobes 4, the upper one often partly divided, nearly equal. Stamens 4, equal. Style shortly bifid. Nuts smooth.

Very common in northern temperate parts, but chiefly in Europe and Asia. A few species spread to the tropics. Poorly represented in the Southern Hemisphere.

Flowers very numerous. Calyx-lobes very slender.
  Upper corolla-lobe deeply notched . ... 1. *M. australis.*
Flowers tolerably numerous. Calyx-lobes narrow-lanceolate. Upper corolla-lobe slightly notched 2. *M. gracilis.*
Flowers few, in few clusters. Calyx-lobes broadly lanceolate. Upper corolla-lobe often bifid ... 3. *M. serpillifolia.*

1. M. AUSTRALIS. *R. Br.* Erect or ascending, 1-2 feet high, coarsely or finely pubescent throughout. Leaves lanceolate to narrow-oblong, the larger ones narrowed into a stalk, and with few distant obtuse teeth, the smaller ones sessile

and mostly entire, ¼-1 inch long. Flowers usually numerous, clustered in the axils, generally each on a slender stalk about as long as itself. Calyx 2-3 lines long, sometimes rather smaller, teeth very slender. Corolla-tube usually not exceeding the calyx, but in some specimens conspicuously in excess of it; lobes shorter than the tube, the upper one often deeply 2-lobed, in some specimens with crowded flowers and narrow elongated corollas quite entire.

Common in marshes, principally in the northern and central districts; also in Queensland, New South Wales, Victoria, and South Australia. Fl. Feb.

2. M. GRACILIS, *R. Br.* Sub-erect and branching, 6 inches to 1 foot high, pubescent or rarely nearly glabrous. Leaves mostly stalked, ovate to broadly lanceolate, entire or with few obscure teeth, mostly ½-¾ inch long. Flowers in axillary clusters, not as crowded as in *M. australis*, and smaller. Flower-stalks short or none. Calyx 1½-2 lines long; teeth narrow, lanceolate. Corolla-tube shorter than the calyx, and the lobes shorter than the the tube, the upper one entire or nearly so.

In dry stony places, principally in central and northern districts; also in Victoria, South Australia, and New South Wales. Fl. Jan.-Mar.

3. M. SERPILLIFOLIA, *Benth.* Small, slender, simple or branched at the base, erect or ascending, usually under 6 inches long, finely pubescent or glabrous. Leaves oblong, mostly shortly stalked and entire, about ¼ inch long. Flowers few, in axillary clusters, sometimes reduced to 2 in the opposite leaf-axils, shortly stalked. Calyx narrow, 1½-2 lines long; lobes usually broadly lanceolate. Corolla-tube shorter than or as long as the calyx; lobes about as long as the tube, broad, the upper one often notched.

Southport, South Cape Bay, in damp country, chiefly in central districts; also throughout Australia. Fl. Jan.-Apr.

2. LYCOPUS.

Calyx 4 or 5-toothed. Corolla-tube short; lobes 4, nearly equal. Stamens 2, the rudimentary filaments of a second pair often present. Style shortly bifid. Nuts obscurely 3-angled.

A small genus, almost confined to northern temperate regions.

L. AUSTRALIS, *R. Br.* An erect, often rather tall, herb. Leaves lanceolate, shortly stalked or sessile, coarsely toothed, 3-4 inches long. Flowers many, in dense axillary clusters. Calyx with 5 acute lanceolate teeth, rather longer than the tube, varying from 1½ to nearly 3 lines long. Corolla-tube shorter than the calyx; lobes very short.

Moist, shady places in many parts. It occurs also in Queensland, New South Wales, Victoria, and South Australia. Fl. Jan.-Mar.

Very close to *L. europæus*, and perhaps only a variety.

3. PRUNELLA.

Calyx-lobes arranged in 2 lips, the upper flat and shortly 3-toothed, lower with 2 narrow lobes. Corolla-tube generally exceeding the calyx; lobes in 2 lips (upper one short, broad, erect, nearly entire; lower one short, spreading, 3-lobed). Stamens 4, lying close to the upper lip. Style bifid. Nuts oblong, smooth.

A small genus, dispersed throughout temperate and sub-tropical regions.

P. VULGARIS, *Linn.* A small, usually clustered, perennial, with procumbent stems and ascending flowering branches. Leaves broadly or narrowly ovate, stalked, entire, obscurely toothed, rarely divided, 1-3 inches long. Flowers in numerous clusters, in the axils of altered floral leaves at the ends of the branches.

condensed into an oblong head 1-2 inches long. Calyx 2-3 lines long. Corolla usually purple, and nearly ½ inch long, rarely pale or even white.

Very common. Probably indigenous, but also introduced with cultivation. In New South Wales, Victoria, and South Australia. The species has a distribution about as wide as the order. Fl. spring to autumn.

4. SCUTELLARIA.

Calyx with two entire lips, the upper one bearing on its back a small scale-like protuberance. Corolla-tube long; lobes in 2 lips, upper one somewhat hood-shaped, the lower one short and spreading. Stamens 4, situated under the upper lip. Anthers ciliate. Style 2-lobed, but the upper one very short. Nuts with a rough surface.

The genus is small, but widely distributed in temperate parts, and principally in the Northern Hemisphere.

S. HUMILIS, *R. Br.* A perennial, with a creeping rootstock and ascending stems, seldom more than 4-6 inches high, very slightly pubescent or glabrous. Leaves stalked, the lower ones broadly cordate, the upper ones narrow-ovate, entire or obscurely toothed, mostly ½-1 inch long. Flowers solitary in the axils, shortly stalked. Calyx 1½-2 lines long. Corolla 3-4 lines long, lower lip rather longer than the upper one.

Rare in moist places, principally in the north; also New South Wales, Victoria, South Australia, and Queensland. Fl. Sept.-Dec.

5. MARRUBIUM.

Calyx with 5 or 10 teeth. Corolla-tube short, 2-lipped; upper lip erect, notched, or bifid; lower lip spreading, 3-lobed. Stamens 4, enclosed in the tube. Nuts round.

The genus belongs to Europe and Northern Asia. The common species has been introduced throughout the temperate world.

M. VULGARE, *Linn.* An erect branched perennial 1-2 feet high, very pubescent. Leaves orbicular, stalked, obtusely toothed, wrinkled on the surface. Flowers numerous, in dense clusters in the leaf-axils. Calyx-teeth 10, recurved. Corolla white, slightly exceeding the calyx; upper lip narrow, split nearly to its base into 2 lanceolate acute lobes.

Introduced, and widely dispersed. Fl. spring and summer.

6. STACHYS.

Calyx 5-toothed. Corolla-tube shorter or longer than the calyx; lobes in 2 lips (upper one erect, entire, more or less hood-shaped; lower lip longer, spreading, 3-lobed). Stamens 4, lying under the upper lip. Nuts smooth, round.

The genus is found throughout temperate climates in the Northern Hemisphere. It is only represented in Australia by an introduced species.

S. ARVENSIS, *Linn.* A small erect annual, branched at the base, with simple stems, mostly 6 inches to 1 foot high, pubescent. Leaves ovate, obtusely toothed, the lower ones stalked, ½-¾ inch long. Flowers clustered in the axils. Calyx about 3 lines long, the lobes lanceolate, acute, as long as the tube. Corolla hardly longer than the calyx.

Introduced, and widely dispersed. Fl. spring and summer.

7. PROSTANTHERA.

Calyx with 2 entire lips. Corolla-tube short; the lobes in 2 lips (upper lip erect, usually short, slightly concave, broadly 2-lobed; lower lip spreading, 3-lobed, in most species much exceeding the upper lip). Stamens 4, the connective variously produced. Style shortly bifid. Nuts with a rough surface.

The genus, which consists of about 40 shrubs and under-shrubs, is confined to extra-tropical Australian distribution, and is very poorly represented in the west.

Leaves lanceolate, 2-3 inches long	1. *P. lasianthos.*
Leaves about as broad as long, $\frac{1}{4}$-$\frac{1}{2}$ inch	2. *P. rotundifolia.*
Leaves obovate, 1-3 lines long...	3. *P. cuneata.*

1. P. LASIANTHOS, *Lab.* A tall, erect, branched shrub, mostly from 6-12 feet high. Leaves broadly to narrowly lanceolate, acute, stalked, serrate, pale beneath, mostly 2-3 inches long. Flowers usually many, in terminal compound racemes. Flower-stalk 2-3 lines, bearing 2, usually linear, bracts, about 1 line long. Calyx about 2 lines long, the lips broad, rounded, about as long as the tube. Corolla white, marked with purple, $\frac{1}{2}$-$\frac{3}{4}$ inch long, pubescent throughout.

Very common; also throughout extra-tropical Australia. Fl. Dec.

2. P. ROTUNDIFOLIA, *R. Br.* A tall, branched, spreading shrub, often 6-7 feet high. Leaves broadly reniform, orbicular or even spathulate, entire, mostly from 2-6 lines long, on stalks mostly as long as the laminæ. Flowers in small terminal racemes. Flower-stalks 1-2 lines, bearing 2 linear deciduous bracts. Calyx about 2 lines long; lips short and very broad. Corolla blue, nearly $\frac{1}{2}$ inch long.

Common in the vicinity of the North and South Esk, East Coast; also in New South Wales, Victoria, and South Australia. Fl. Sept.

3. P. CUNEATA, *Benth.* A branched spreading shrub, of 2-3 feet. Leaves sessile or nearly so, narrow-obovate to orbicular, obtuse, contracted below, but seldom stalked, often recurved towards the point, and concave from side to side, mostly 1-3 lines long, usually clustered on the branches. Flowers mostly solitary, axillary, towards the ends of the branches, but sometimes in sufficient number to make the termination of the branch to appear as a leafy raceme. Flower-stalk about 1 line long. Bracts rather long, linear. Calyx nearly 3 lines long, the tube conspicuously striate; the lips broadly rounded, about as long as the tube. Corolla white, spotted with purple, about $\frac{1}{2}$ inch long, hardly or not at all pubescent.

South Esk River; also in the Australian Alps, Victoria. Fl. Nov.

8. WESTRINGIA.

Calyx 5-toothed or lobed. Corolla-tube short; lobes 2-lipped (upper lip erect, but flat and broadly 2-lobed; the lower lip spreading and 3-lobed). Stamens 2 perfect ones and 2 more or less rudimentary. Style shortly bifid. Nuts with a rough surface.

A purely Australian genus. The species are notoriously variable, and connected by intermediate links.

Leaves linear. Calyx-teeth very short	1. *W. rigida.*
Leaves oblong. Calyx-teeth long.	
Leaves with revolute margins, hairy beneath ...	2. *W. brevifolia.*
Leaves flat, glabrous or nearly so	3. *W. rubiæfolia.*

1. W. RIGIDA, *R. Br.* A rigid, somewhat spreading, shrub, mostly 5-6 feet high, more or less pubescent in most parts. Leaves in whorls of 3 or 4, linear, acute, often rigid, margins closely revolute, upper surface usually roughly tuberculate, under surface white with hairs, mostly $\frac{1}{4}$-$\frac{3}{4}$ inch long. Flowers sessile, solitary, axillary, few or many towards the ends of the branches. Calyx-tube about 3 lines long, ribbed; teeth very short and acute. Corolla

densely pubescent. about 6 lines long: lower lip not exceeding the upper one, white, marked with purple. *W. rosmariniformis*. Sm. (partly).

Common in many parts, in rocky places. at a considerable altitude to sea-coasts: also in Victoria, South Australia. and West Australia. Fl. Dec.

> The form with less rigid leaves, rather smaller flowers, and less pubescent corollas. and the leaves mostly in whorls of 4. is often considered distinct. *W. dampieri*. R. Br. *W. angustifolia*. R. Br., was originally given to the long narrow-leaved Tasmanian form.

2. W. BREVIFOLIA, *Benth.* An erect shrub, usually 3-4 feet high. most parts conspicuously pubescent. Leaves in whorls of 4. oblong to broadly lanceolate. margins more or less revolute. very pubescent beneath. mostly 3-4 lines long. Calyx-teeth acute. quite half as long as the tube. Flowers not otherwise differing from *W. rigida*. except that they are smaller and not quite as pubescent.

Near Launceston: West Coast. Fl. Sept.-Nov.

> Very close in many details. and often considered a form, of *W. rosmariniformis*. Its much closer affinity to *W. rubiæfolia* warrants its recognition as distinct, at least in Tasmania.

3 W. RUBIÆFOLIA, *R. Br.* An erect branched shrub. 1-3 feet high, nearly or quite glabrous. Leaves in whorls of 4, oblong to lanceolate. acute or obtuse, margins slightly recurved. 2-3 lines long. Calyx-tube ribbed. scarcely above 1 line long, teeth acute, nearly or quite as long as the tube. Flowers not otherwise differing. except in size, from *W. rigida*.

Common in many parts. Fl. Dec-April.

> The species approaches *W. brevifolia* in many forms. One form from near George's Bay is pubescent on the branches. slightly so on the leaves, which are thick, the calyx quite 3 lines long. with lanceolate-acute lobes quite as long as the tube.

9. NEPETA.

Calyx tubular with an oblique mouth. tube with 15 ribs; teeth 5, unequal. Corolla with a rather long tube and 2-lipped limb: upper lip erect. slightly concave, notched; lower lip spreading and 3-lobed Stamens 4. lying under the upper lip.

A rather large genus, almost confined to Western Asia and Europe. The species found in Tasmania has been introduced into many climates. and will probably become freely dispersed.

N. CATARIA, *Linn.* An erect branching perennial. often 2-3 feet high. Stems square, finely pubescent in most parts. Leaves broadly or narrowly ovate, with a rounded base, acute. margin boldly toothed. pale beneath, mostly about 2 inches long. on stalks half as long as the laminæ. Flowers in numerous compact. often distant, clusters at the ends of the branches. Calyx about 3 lines long. swollen below, teeth narrow-lanceolate, acute. rather more than half as long as the tube. Corolla white or pale blue. 3-4 lines long.

Risdon. Introduced. Fl. Jan.

10 TEUCRIUM.

Calyx 5-toothed. equal or nearly so. Corolla-tube short, the 5 lobes forming a lower lip; the 2 lobes usually forming the upper lip divided very low down. and becoming lateral. Stamens 4. erect and protruding with the style between the upper lobes. Style shortly bifid. Nuts usually rough.

A large genus, very widely distributed in the temperate portions of both Hemispheres. but principally the Northern.

T. corymbosum, *R. Br.* An erect branched perennial, usually 2-3 feet high. Stems square, pubescent in most parts. Leaves stalked, ovate, acute, irregularly and coarsely toothed, mostly 1-2 inches long. Flowers in numerous, few-flowered, loose, irregular panicles, dispersed along the ends of the branches. Calyx campanulate, about 2 lines long; the teeth acute, and as long as the tube. Corolla white, 4-6 lines long, the 4 upper lobes equal, about 1 line long, the lowest lobe much longer. Nuts pubescent.

Common in many parts, but principally in dry situations; also throughout Eastern and Southern Australia. Fl. Dec.-Feb.

11. AJUGA.

Calyx-teeth 5, equal. Corolla limb with a very short, hardly apparent, upper lip, and a long spreading lower lip. Stamens 4. Style shortly bifid. Nuts rough.

The genus is principally found in temperate Asia and Europe.

A. australis, *R. Br.* An erect, or more often depressed, perennial, with numerous branches arising from a thickened rootstock, branches seldom exceeding a few inches. Leaves from oblong to nearly linear, all but the upper ones on long stalks, remotely and obscurely toothed, lower ones often 6 inches long, upper ones under 1 inch. Flowers in small, dense, axillary clusters. Calyx usually very pubescent, mostly 2-3 lines long; teeth acute, shorter than the tube. Corolla blue, variable in size and details, usually about 6 lines long, upper lip from hardly apparent to nearly 1 line long.

Very common, mostly in fairly damp situations; also throughout Eastern and Southern Australia. Fl. Dec.-Feb.

Order LIX. *PLANTAGINACEÆ.*

Flowers regular. Sepals 4. Corolla small, scarious, gamopetalous, with 4 spreading lobes. Stamens 4, rarely fewer, inserted on the corolla. Ovary superior, free, 1, 2-4 celled, with 1 or 2 ovules in each cell. Style simple, filiform, much elongated. Fruit a capsule, splitting transversely.

A small order, widely distributed in both temperate zones.

PLANTAGO.

The definition of the order. Herbs with minute sessile flowers in spikes or heads. Leaves all radical. Each flower subtended by a bract.

i.	Flowers in short or long spikes, if reduced to 2-3 flowers the sepals hairy	ii.
	Flowers 1-4, in a head	iv.
ii.	Flowers in the spike, loose or spreading, 2 lines long	1. *P. varia.*
	Spike dense	iii.
iii.	Leaf long and broad	7. *P. major.*
	Leaf lanceolate. Spike ovoid, short, on a long stalk	6. *P. lanceolata.*
	Spike long, linear, dense. Leaf lobed	5. *P. coronopus.*
	Spike ½-¾ inch, linear	2. *P. tasmanica.*
iv.	Flowers 1 line long. Sepals and petals broad	3. *P. brownii.*
	Flowers under 1 line. Sepals and petals acute	4. *P. gunnii.*

1. P. varia, *R. Br.* More or less clothed with short hairs. Leaves lanceolate-spathulate, usually remotely and obtusely toothed, narrowed below into rather long stalk, apex acute, or where very small obtuse, and then sometimes oblong or even linear, ¾-6 inches long. Flowers about 2 lines long, in a not very dense often interrupted spike, usually from 1-5 inches long, but sometimes reduced to

few flowers in a globose head. Sepals broadly oblong, hairy, the margins very scarious. Petals very obtuse. Fl. spring and summer.

Very common; also throughout Australia.

> A most variable plant, upon whose varieties many species have been founded.

2. P. TASMANICA, *H.* Very similar to the last, the leaves sometimes quite glabrous, but often hairy. Spike never long. Flowers about 1 line. Sepals and bracts glabrous, the margins not broadly scarious. *P. antarctica*, D'cne., and *P. bellidifolia*, D'cne., included.

Very common at a considerable altitude; also in Victoria. Fl. summer.

3. P. BROWNII, *Rapp.* Small, glabrous or hairy, succulent, the leaves and the numerous peduncles forming a rosette. Leaves oblong-spathulate, ½-1 inch long. Flowers very few, in a spherical spike, nearly as large as in *P. varia*. The sepals similar, but glabrous. Petals rather more acute. Passing into small forms of *P. varia*.

Common on sea-coasts; also in New Zealand. Fl. summer.

> An alpine form, with a more erect habit and few scapes, has been described distinct as *P. paradoxa*, H.

4. P. GUNNII, *H.* A very distinct little plant, usually pale from the rather copius tomentum. Leaves 3-6 lines long, oblong, forming a rosette. Peduncles ¼-½ inch, slender. Flowers mostly solitary, about ¼ line long. Sepals and petals acute.

Western mountains and Mount Field, often on cushions of *Abrotanella*, &c. Fl. Feb.

The following introduced plants have become well established:

> 5. P. CORONOPUS, *Linn.* Leaves pale, linear, acute, often with few simple lobes, 1-4 inches. Spike 1-4 inches long, very narrow and dense. The flowers closely appressed.
>
> 6. P. LANCEOLATA, *Linn.* Leaves dark green, lanceolate, 4-8 inches, the main ribs very prominent. Peduncles long, angled. Spike short, dense, oblong, dark.
>
> 7. P. MAJOR, *Linn.* Leaves very broadly ovate, 6-10 inches long. Spike erect, rigid, 6-10 inches, linear. Flowers very numerous, but not closely appressed.

ORDER LX. *PHYTOLACCACEÆ.*

Perianth of 5 or 4 divisions, herbaceous or more or less scarious. Stamens as many or more than the perianth-lobes. Ovary of a single, or several, free or nearly free carpels, with a single ascending ovule in each. Styles as many as the carpels. Fruiting-carpels variously enlarged.

The order is almost confined to the warmer districts of America and Africa.

DIDYMOTHECA.

Flowers diœcious. Perianth small, deeply 4-lobed. Stamens twice as many as the perianth-lobes, with very short filaments, and radiating in a single row round a central disk. Pistillate flowers with 2 carpels attached by their inner edge to a central column. Styles linear. Fruit dry, the carpels adhering to the central column, and splitting from above downwards, chiefly along the dorsal suture.

D. THESIOIDES, *Hook.* An erect perennial, with very slender branches of 1-2 feet. Leaves linear, ½-2 inches long, alternate. Flowers 1½-2 lines diameter, on slender stalks of 1 line long or under, each one solitary in the leaf-axils, often numerous along the branches. Perianth-segments broad, under $\frac{1}{2}$ line long. Stamens about 1 line long. Fruit $1\frac{1}{2}$-2 lines broad.

Near Launceston, Kelvedon, Islands of Bass Straits; also in South Australia and West Australia. Fl. summer.

ORDER LXI. *CHENOPODIACEÆ.*

Perianth of 5 segments or lobes, rarely fewer, herbaceous, rarely partially scarious. Stamens 5, or rarely fewer, opposite the perianth-lobes, and inserted close to their base. Ovary free, 1-celled, with a single ovule. Styles or style-branches 2 or 3. Fruit fleshy or membranous, forming a closed sack round the seed, and surrounded more or less by the persistent perianth.

The order is large, and has a world-wide distribution.

Leaves broad.	
Fruit orange or red, berry-like	1. *Rhagodia.*
Fruit dry, enclosed in perianth.	
Flowers bisexual. Perianth not much altered in fruit	2. *Chenopodium.*
Flowers unisexual. Fruiting-perianth enlarged, flat, of 2 parts	3. *Atriplex.*
Leaves linear, nearly cylindrical.	
Leaves under $\frac{1}{2}$ inch. Flowers solitary in the axils	4. *Threlkeldia.*
Leaves $\frac{1}{2}$-1 inch long. Flowers usually clustered in the axils...	5. *Suæda.*
Plant leafless, fleshy, segmented	6. *Salicornia.*

1. RHAGODIA.

Perianth deeply divided into 5 segments, scarcely enlarging in fruit. Stamens 5 or fewer. Filaments flattened. Fruit a small, depressed, berry-like utricle, usually much larger than the perianth, but sometimes enclosed in it. Flowers usually bisexual, but not always so.

The genus is confined to Australian distribution, and differs from *Chenopodium* in little beyond the fruit.

Plant coarse. Leaves oblong. Flowers many ...	1. *R. billardieri.*
Plant slender. Leaves angled. Flowers few ...	2. *R. nutans.*

1. R. BILLARDIERI, *R. Br.* A diffused or sub-erect, spreading shrub, often 4 or 5 feet high, young parts and inflorescence covered with mealy scales. Leaves variable, mostly narrow-oblong and narrowed into a stalk, sometimes broader with 2 obtuse lobes towards the base, $\frac{1}{2}$-1 inch long, margin often recurved, consistency fleshy, green above, pale beneath. Flowers small, numerous, in rather slender compound panicles towards the ends of the branches, the stamens and pistil not always perfect in the same flower, when open usually under 1 line diameter. Fruit nearly globular, about $2\frac{1}{2}$ lines long, deep red, very fleshy, much exceeding the perianth. *R. baccata*, Hook.

Very common on all the coasts; also throughout Australia. Fl. Nov.

2. R. NUTANS, *R. Br.* A slender much-branched perennial, prostrate diffuse, or the filiform branches climbing up undergrowth often for several feet. Leaves mostly broadly hastate, but the upper and lower ones often lanceolate, stalked, $\frac{1}{4}$-1 inch long, mostly opposite. Flowers in small interrupted spikes, simple or compound panicles, towards the ends of the branches. Perianth, when open, about $\frac{1}{3}$ line diameter. Staminate flowers with 2 or 3 stamens and a rudimentary pistil. Pistillate flower with only 1 or no stamen. Fruit variable in size, often $1\frac{1}{2}$-2 lines diameter, depressed, globular, pericarp thin, inflated, orange-red.

Very common: also throughout Australia. Fl. Nov.

2. CHENOPODIUM.

Flowers bisexual, except in rare instances. Perianth herbaceous, deeply 5-lobed, rarely fewer. Fruiting-perianth clasping the fruit, but not much enlarged. Stamens 5 or fewer. Ovary ovoid to globular. Styles 2 or rarely 3. Fruit dry, enclosed in the perianth, ovoid with an erect seed, or depressed-globular with a horizontal seed.

The genus is very widely spread in northern temperate climates, and many of the commoner forms have been carried with cultivation to all parts of the world.

Erect. Usually more or less pale. Flowers numerous, in large or small dense clusters	1. *C. album.*
Usually spreading, sub-erect. Dark green. Flowers numerous, in fairly loose clusters	2. *C. murale.*
Usually prostrate. Leaves white beneath. Flowers few, in axillary clusters	3. *C. glaucum.*

1. C. ALBUM, *Linn.* An erect annual, 1-2 feet high, the young parts, foliage, and inflorescence more or less covered with scaly tomentum. Leaves usually pale, especially the under surface, but sometimes quite green, stalked, rhomboidal to lanceolate, all except the small floral ones irregularly and coarsely toothed on the margin, mostly 1 or 2 inches long. Flowers clustered, in short dense or elongated and interrupted spikes in the upper axils, but mostly terminal. Perianth about 1 line diameter, the lobes usually with a prominent keel. Fruit completely enclosed in the perianth. Seeds horizontally flattened.

Introduced. Very common. Fl. all spring and summer.

2. C. MURALE, *Linn.* A coarse, much-branched annual, spreading, sub-erect to decumbent, the branches grooved. Foliage dark green, and very little tomentum on any part. Leaves similar to the last, only nearly or quite glabrous, and usually rather succulent. Flowers numerous, in rather dense much-branched panicles, along the branches principally, but also terminal. Flowers and fruit similar to the last, only the perianth-lobes often less keeled.

Introduced. A common weed about towns. Fl. spring and early summer.

3. C. GLAUCUM, var. *littorale.* A small, much-branched, spreading annual, procumbent or ascending. Leaves rhomboidal to narrow-obovate, margin with few obtuse teeth to entire, narrowed into a stalk, green above, white with scaly tomentum beneath (these scales, like in most of the genus, consist, when fresh of spherical, nearly free, cells), ¼-1 inch long. Flowers small, in small axillary and terminal heads. Perianth under ½ line diameter; lobes 4 or sometimes 3, smooth, very slightly keeled. Stamens usually 1, rarely 2. Fruit much exceeding the perianth, nearly always flattened. Seed usually horizontally flattened, rarely erect.

Very common on muddy coasts and saline marshes; probably indigenous. Found along the coast almost throughout Australia. Fl. Nov.-Dec.

The type approaches *C. album* much more closely than this variety in general appearance, and has more regularly toothed leaves, usually 5 stamens, the fruit is enclosed in the perianth, and the seed in most fruits is erect.

3. ATRIPLEX.

Flowers unisexual, on the same or different plants. Staminate flowers, with a deeply 5-lobed perianth. Stamens 5 or fewer. Pistillate flower with a 2-lobed perianth, which enlarges considerably round the fruit, forming a flat variously-shaped protection. Fruit dry, not enlarging much, and buried in the perianth, containing a seed vertically flattened in a direction parallel to the lobes of the perianth, except in *A. billardieri*, where the seed is flattened at right angles to the perianth.

A very widely-spread genus, principally found on coasts.

Shrubs covered with white scales.
    Leaves mostly under 1 inch. Pistillate flowers in conspicuous clusters or spikes ... . 1. *A. paludosa.*
    Leaves mostly exceeding 1 inch. Pistillate flowers in small axillary clusters ... ... 2. *A. cinerea.*
Succulent herbs. Staminate and pistillate flowers intermixed.
    Green or mealy. Fruiting-perianth, conspicuous ... 3. *A. patula.*
    Yellow and crystalline .. .. 4. *A. billardieri.*

1. A. PALUDOSA. *R. Br.* A small, erect, spreading shrub, whitish, with appressed scales. Leaves lanceolate to linear, blunt and contracted into a stalk, entire, $\frac{1}{2}$-1 inch long. Flowers nearly or quite diœcious. Staminate flowers in usually numerous globular clusters, on common, simple, or branched stalks at the ends of the branches. Pistillate flowers in fewer heads, on shorter less-branched stalks, also formed in the leaf-axils. Fruiting-perianth broadly ovate, acute, flat, about 2-4 lines long, but variable.

Circular Head and other places on the North Coast; also in Bass Straits. It occurs throughout Southern Australia. Fl. Nov.

2. A. CINEREA, *Poir.* A sub-erect, spreading, or depressed shrub, usually 3 or 4 feet high, whitish, with appressed scales, rarely the upper surfaces of the leaves green. Leaves narrow-oblong or lanceolate, sometimes broader or almost linear, blunt, and narrowed into a short stalk, entire, mostly 1-2 inches long, but often longer, or all much smaller. Flowers partially diœcious. Staminate flowers in globular heads, on a common, simple, or branched stalk at the ends of the branches. Pistillate flowers in clusters in the axils; a few pistillate flowers also develop in the upper axils of the staminate plants. Fruiting-perianth broadly rhomboidal, about 2 lines long, flat, but rather thickened.

Common on coasts; also throughout Australia. Fl. Nov.-Jan.

3. A. PATULA, *Linn.* A sub-erect or prostrate annual, very variable in habit and detail, dark-green, but the inflorescence and younger parts often pale with scaly tomentum. Leaves narrowly or broadly lanceolate, entire, rarely toothed, obscurely lobed or hastate, sometimes all under 1 inch, and often many 2-3 inches long. Flowers clustered in the upper leaf-axils, and also forming terminal interrupted spikes or panicles. Staminate flowers not $\frac{1}{2}$ line diameter, stamens normally 5. Pistillate flowers about 1 line at the time of flowering the perianth enlarging to a considerable extent, often to 4 or 5 lines subsequently. Fruiting-perianth flat, rhomboidal or ovate, the lower third united.

Possibly introduced. Common in cultivated and waste places near the sea. Fl. Nov.-Jan.

The extreme variability of the plant has given rise to many species being founded on it. The following forms have been rather freely dispersed in Tasmania: -

Var. *angustifolia*. Leaves all broadly to narrowly lanceolate. Fruiting-perianth rhomboidal, slightly scaly. This plant is sub-erect or depressed, and common in waste places on the banks of the Derwent and Tamar.

Var. *littoralis*. Leaves narrowly lanceolate or linear. Fruiting-perianth rhomboidal, often white with tomentum. This form approaches some forms of *A. rosea*, and is hardly distinct from it. Habit procumbent. Common in cultivations on the banks of the Derwent, and probably elsewhere.

The typical European form has often broadly-hastate toothed leaves and ovoid fruiting-perianths, and has a very restricted hold as yet in Tasmania.

4. A. BILLARDIERI. ***Hook.*** Small, prostrate, and spreading, branches about 6-9 inches long, the whole plant somewhat yellow, and covered with the nearly free globular tomentum so common in the order, but in this species the cells are large, giving the surface a crystalline appearance. Leaves oblong or nearly so, nearly sessile, obtuse, entire, or obscurely toothed, mostly about ½ inch long. Flowers separated from one another; the staminate terminal, many, in small sessile clusters or solitary, perianth about 1 line diameter, stamens exserted; pistillate flowers in small sessile clusters, usually 2 or 3 together, in the leaf-axils lower down the branch, perianth rhomboid, under ½ line long. Styles long, filiform, freely exserted. Fruiting-perianths with the lower united portion much elongated, so as to become obovoid, compressed contrary to the plane of the valves, so that they become convex instead of flat, as in the rest of the genus. Seed slightly compressed, parallel to the compression of the perianth. *A. crystallina*, Hook.

Recherche, Southport, Pirates Bay, George's Bay, George Town. Probably in many localities on sandy shores. It occurs also throughout the coast of extra-tropical Australia. Fl. Nov.-Dec.

4. THRELKELDIA.

Flowers bisexual. Perianth tubular, with 4 or 5 short lobes that are usually smooth on their outer surface. Stamens 5 or fewer. Styles 2 or 3. Fruit depressed-globular, dry, surrounded by the persistent perianth that becomes enlarged and fleshy.

A small Australian genus.

T. DIFFUSA, ***R. Br.*** A small, spreading, somewhat fleshy, under-shrub, mostly about 1 foot. Leaves fleshy, nearly cylindrical, mostly about ¼ inch. Flowers small, solitary, and sessile in the leaf-axils. Perianth under 1 line long; the lobes very short, erect, and ciliate. Fruiting-perianth enlarged to twice as long, fleshy.

Near George Town, on the shore; Bass Straits; also in Victoria, South Australia, Western Australia, and New South Wales. Fl. Nov.

5. SUÆDA.

Flowers normally bisexual, but occasionally not maturing both elements. Perianth deeply divided into 5 membranous lobes. Stamens 5. Styles 2 or 3. Fruit dry, surrounded by the closely over-lapping and hardly altered perianth.

A small genus of succulent coast plants that differ from *Chenopodium* only in habit. The distribution is world-wide, and the Tasmanian plant, though rather robust, is identical with a common form distributed as widely as the genus.

S. MARITIMA, ***Dumort.*** Sub-erect or diffuse, and much-branched, annual or biennial in most situations, but the Tasmanian form appears perennial, usually about 1 foot high, and the stems somewhat woody. Leaves fleshy, almost cylindrical, ½-1½ inch long. Flowers small, in close axillary clusters or solitary. Perianth about 1 line diameter. Fruit depressed, globular, rarely ovate.

Very common on muddy coasts; also throughout Australia. Fl. Oct.-Nov.

6. SALICORNIA.

Flowers mostly bisexual. Perianth thin, and variously shaped, thickened subsequent to flowering. Stamens 1 or 2. Fruit somewhat flattened, and enclosed in the persistent perianth.

The genus consists of fleshy leafless herbs or shrubs, with a woody axis, and the upper portion at least segmented off into distinct portions. The flowers grow at the joints, and are overlapped and buried by the segment beneath them. The distribution is world-wide.

Shrub. Flowers 3 together ... ... 1. *S. arbuscula.*
Herb Flowers 5 or 7 .. .. 2. *S. australis.*

1. ARBUSCULA. *R. Br.* An erect, much-branched, and spreading shrub, from 6 inches to 8 feet high, the lower portions hard and woody, the ends of the branches fleshy; segments of the branches mostly from ¼-½ inch long, 1-1½ line diameter. Flowers towards the ends of the branches, the flowering-segments somewhat shortened and thickened. Flowers in three, more or less connate. Stamen solitary.

On salt marshes. Common in the south. George's Bay, Circular Head, and Bass Straits; also in Victoria and West Australia. Fl Nov.

2. S. AUSTRALIS, *Sol.* A procumbent spreading perennial with woody axes and thick fleshy branches, segments ¼-1 inch long and ¼-½ inch thick, obscurely bilobed at their upper terminations. Flowering-segments shorter and thicker, forming terminal spikes. Flowers usually 5 or 7, clustered together in each joint. Stamens usually 2. *S. indica*, R. Br. (not of Willd.)

Very common on coasts and salt marshes; also throughout Southern Australia. It occurs in New Zealand. Fl. Nov.

ORDER LXII.—*AMARANTACEÆ.*

Perianth of 5 free or slightly united segments, rigid, and partially or entirely scarious. Stamens 5 or fewer, opposite the perianth-segments; in many genera the filaments are united at the base and form a cup round the pistil, and there are often developed teeth on this cup intermediate with the filaments. Ovary 1-celled, with 1 reclinate ovule; in some forms, not Tasmanian, the ovary contains many ovules. Style usually simple and entire, with a capitate stigma. Fruit a membranous utricle in Tasmanian forms.

A large order, widely distributed in temperate parts of both Hemispheres.

Leaves nearly cylindrical, fleshy ... . 1. *Hemichroa.*
Leaves broadly obovate to lanceolate. Flowers in large, dense, terminal clusters ... ... 2. *Trichinium.*
Leaves linear to lanceolate. Flowers in small axillary clusters. Perianth white ... ... 3. *Alternanthera.*

1. HEMICHROA.

Flowers usually bisexual. Perianth of 5 free segments, slightly or not at all scarious. Stamens 5 or fewer, united towards the base. Style bifid.

A very small genus, confined to Australian distribution.

H. PENTANDRA, *R. Br.* A small, prostrate, slightly-branched perennial, with ascending or erect branches, mostly 6-9 inches. Leaves linear-lanceolate, fleshy, nearly cylindrical, ¼-1 inch long. Flowers solitary in the axils, sessile, but clasped by 2 ovate acute bracts. Perianth pink, erect, about 3 lines long in most Tasmanian specimens, but often much shorter. Stamens 5, always short, in many plants rudimentary and not developing anthers. Pistil with a globose ovary and thick erect style that is grooved throughout, and a bifid stigma. Fruit about 1 line diameter, and enclosed in the persistent perianth. *Polycnemon pentandrum*, F. v. M.

Common in most saline marshes; also throughout Southern Australia. Fl. Nov.-Jan.

2. TRICHINIUM.

Flowers bisexual. Perianth of 5 segments, sometimes free, but usually slightly united at the base, partly scarious, and more or less covered on the outer surface with long fine hairs. Stamens 5, unequal, often some rudimentary, united at the base. Style slender, with a minute capitate stigma.

The genus contains about 50 species, and is limited to Australian distribution.

T. SPATHULATUM. *R. Br.* A small perennial, with a thick rootstock, and radiating prostrate stems, with ascending ends often 6 inches long. Leaves oblong, narrowed below into a short stalk, ½-1 inch long. Flowers numerous, in a dense, ovate, terminal head of 2-4 inches long, and nearly 1 inch in diameter. Each flower subtended by a brown scarious bract, broadly lanceolate, 2½ lines long, and 2 bracteoles that are thin, transparent, and rather smaller. Perianth-segments linear, 6 lines long, slightly united at the base, and copiously clothed with long, slender, articulated hairs. Stamens shortly united at the base, unequal, often 2 or 3 without anthers. Ovary globose, usually hairy on the upper surface. Style long, slender, curved. *Ptilotus spathulatus*, Poir.

Common in dry pastures; also throughout Southern Australia. Fl. Sept.-Jan.

3. ALTERNANTHERA.

Flowers bisexual. Perianth of 5 free, or nearly free, scarious glabrous segments. Stamens unequal, seldom all perfect, united below, and often with alternating teeth on the cup. Style very short. Stigma capitate.

Spread throughout the warmer parts of both Hemispheres.

A. DENTICULATA. *R. Br.* Stems prostrate, creeping and rooting at the nodes with ascending or erect, usually simple, branches, 6-9 inches long. Leaves lanceolate to linear, opposite, mostly about 1 inch long. Flowers in small, dense, axillary clusters. Perianth-segments narrow, acute, white, ¼-1½ line long. Stamens about ½ line long, only 2 or 3 maturing. Style very short. *A. sessilis*, var. Hook.; *A. triandra*, Lam.

Near Launceston and Clyde Vale; also in Queensland, New South Wales, and Victoria. Fl. Nov.-Dec.

ORDER LXIII.—*PARONYCHIACEÆ.*

Perianth of 5 or fewer, united or free, partially scarious segments. Stamens of a similar number, opposite the perianth-lobes. Ovary 1-celled, with 1, reclinate ovule. Style 2 or 3-lobed. Fruit a small membranous utricle, enclosed in the persistent perianth.

A small order, closely related to *Amarantaceæ*, differing chiefly in habit. The distribution is very wide throughout temperate and cool climates of both Hemispheres.

An evident descent from *Caryophylleæ*, indicating the true relationship of these orders.

SCLERANTHUS.

Perianth tubular, with short lobes, hardening after flowering. Stamens 5 or fewer. Styles 2, slender. Leaves all linear, opposite, connected across the stem by their expanded hyaline bases.

A very small genus, with a distribution nearly as wide as the order, but often extends to sub-tropical climates.

Flowers dispersed along the stems.
  Perianth-lobes about ½ line. Stamen 1 ... 1. *S. biflorus.*
  Perianth-lobes 1 line long. Stamens 5 ... 2. *S. annuus.*
Flowers clustered at the ends of the branches.
  Perianth lobes about 1 line long. Stamens usually 2 3. *S. diander.*

1. S. BIFLORUS, *Hook.* A small, much-branched, prostrate herb, often massed in moss-like patches of a few inches diameter. Leaves linear, acute, about $\frac{1}{4}$ inch long, mostly with slightly scabrous margins. Flowers axillary, usually 2 together on a short peduncle, but in some districts the flowers are nearly all solitary; the flowers subtended by 2 small ovate bracts, and where a second is present it has 2 still smaller bracts at its base. Perianth about $\frac{1}{2}$ line long; lobes 4 or 5, about as long as the tube. Stamen solitary, inserted on a minute ring round the mouth of the calyx-tube. In the fruiting stage the peduncle usually elongates considerably; the calyx becomes indurated, and enlarged to 1 line.

Very common, chiefly in dry, poor land or sandy places. It occurs in New South Wales and Victoria, and also spreads to New Zealand. The species is variable, but very distinct in general characters. One form, with a spreading habit and very short fruiting-peduncles, has been described as a distinct species as *S. fasciculatus*, H., but where necessarily stunted at least the terminal peduncles elongate, as in the type. In some parts (Mount Arthur, near New Norfolk) nearly the whole of the flowers are solitary on the peduncles, but on most roots a few develop the second flower. Fl. Nov.-Dec.

2. S. ANNUUS, *Linn.* A small, spreading, much-branched prostrate or sub-erect annual, from 1-3 inches long. Leaves 2 or 3 lines long, glabrous, except towards the base. Flowers solitary or few together, in the leaf-axils, sessile or nearly so. Calyx about 1 line long; the lobes linear, acute, usually 5; the tube very short. Stamens 5, inserted into a hardly perceptible ring at the mouth of the calyx-tube, with 5 small teeth alternating. Fruiting-calyx somewhat indurated, about $1\frac{1}{2}$-2 lines long, the tube rather longer than the lobes.

A common European weed. Introduced, and probably widely spreading. Fl. spring and early summer.

3. S. DIANDER, *R. Br.* A small prostrate or erect perennial, branches many, spreading from a woody rootstock, mostly 3 or 4 inches long. Leaves 2-3 lines long, glabrous, concave, with an acute point. Flowers few together, in the upper axils, forming small terminal heads. Perianth about 1 line long, with 5 ovate, acute, scarious lobes, about as long as the tube. Stamens 2, often only 1 developing an anther, inserted on an irregular torn ring that is sometimes hardly perceptible.

Launceston, Avoca; also in New South Wales, Victoria, and South Australia. Fl. Nov.-Dec.

ORDER LXIV.—*POLYGONACEÆ.*

Perianth of 6 or fewer segments, free or slightly united at the base, often in 2 distinct series. Stamens 9 or fewer, alternating with the perianth-segments or irregularly inserted. Ovary free, with a single erect ovule. Style various, 2 or more branched. Stigma usually capitate or fringed. Fruit a small, usually angled, nut.

The order is dispersed throughout the world.

It consists, in temperate parts, principally of herbs. They form a perfectly natural group, and among their inessential characters their entirely sheathing, scarious stipules form an easy means of recognition.

Perianth of 3 small outer and 3 large inner segments 1. *Rumex.*
Perianth of 5 nearly equal segments.
  Wiry herbs. Leaves very shortly stalked... ... 2. *Polygonum.*
  Small shrub with long leaf-stalks, or much-elongated climber ... ... 3. *Muehlenbeckia.*

1. RUMEX.

Perianth of 6 segments, the outer ones small and narrow, the inner ones larger and closing over the fruit. Stamens 6. Styles 3. Stigmas fringed. Flowers bisexual or unisexual.

The genus has a distribution as wide as the order, except that it avoids tropical climates.

- Leaves oblong-lanceolate or nearly so.
  - Flowers bisexual.
    - Inner perianth-segments with plain margins or with very small teeth.
      - Inner segments with a broad base. Lower leaves narrowed at base ... ... 1. *R. crispus.*
      - Inner segments narrowed at base. Lower leaves broad at base ... ... 4. *R. sanguineus.*
    - Inner segments with acute marginal teeth.
      - Marginal teeth simple .. .. 2. *R. obtusifolius.*
      - Marginal teeth 4-6, hooked bristles 3. *R. brownii.*
  - Flowers unisexual. Leaves lanceolate 5. *R. bidens.*
- Leaves hastate. Sexes on different plants 6. *R. acetosella.*

1. R. CRISPUS, *Linn.* A perennial, with erect furrowed stems, 2-3 feet high, from a thickened rootstock. Lower leaves oblong, pointed, narrowed below into a stalk, margin wavy, mostly 6-8 inches long; upper leaves gradually smaller and less stalked. Flowers very numerous, in small clusters towards the ends of the branches, less spreading than in allied species, each flower on a stalk longer than itself. Inner fruiting perianth-lobes equal, slightly crisped on the margin, one or more bearing a fleshy tubercle towards the base, which is broad and often cordate, about 2½ lines long.

Introduced, and widely dispersed. Common European. Fl. Nov.-Dec.

2. R. OBTUSIFOLIUS, *Linn.* Habit similar to the last, but the stems more spreading. Lower leaves broadly oblong, rather rounded, and with a cordate base, margin flat, stalked, passing into the upper lanceolate stem-leaves. Inflorescence as in *R. crispus*, but looser. Inner perianth-segments broad but not cordate, the margins with 3 or 4 rather long teeth; usually 1, sometimes all segments bear a fleshy tubercle at the base, about 2½ lines long.

Introduced. Common about Hobart, New Norfolk, and probably many other centres. Fl. Nov.-Dec.

3. R. BROWNII, *Camp.* Habit similar to *R. crispus*, but rather smaller and more spreading. Lower leaves stalked, oblong, flat, with a cordate or nearly lobed base. Inflorescence very loose and elongated. Flowers on stalks rather longer than themselves. Inner perianth-segments broad, about 2 lines long, the margins bearing 4-6 hooked bristles, without basal thickened tubercles.

Very common, especially in damp places. It occurs also in Queensland, New South Wales, Victoria, and South Australia. Fl. Nov.-Dec.

The following 2 Docks, with a limited foothold, bid fair, however, to extend and become established:—

R. PULCHER, *Linn.* Ascending, with stiff spreading branches, 1-2 feet. Leaves oblong, with a cordate base, and narrowed in the middle. Whorls of flowers distinct but compact. Inner segments toothed, as in *R. obtusifolius.*

R. DUMOSUS, *Cunn.* Similar to *R. pulcher*, but much more branched and spreading. Flowers 1 or 2 together, dispersed along the branches. *R. flexuosus*, Sol. A native of South Australia, New South Wales, and New Zealand.

4. R. SANGUINEUS, *Linn.* Habit as in preceding species. Stem 1-2 feet high. Leaves narrow-oblong, somewhat wavy on the margin, and rounded at the base. Inflorescence elongated, the whorls often distant from one another. Flower-stalks rather long. Inner segments of the fruiting-perianth about 1½ line long, one segment usually larger than the others, and then the only one to bear a fleshy tubercle, margin of lobes without teeth except occasionally in a few isolated flowers.

Introduced, and becoming widely dispersed. Common in Europe. A similar form, but of rather larger growth (*R. conglomeratus*, Murr.), has also been introduced, but is seldom met with. Fl. spring.

5. R. BIDENS, *R. Br.* A creeping, ascending perennial. Stems thick, prostrate, and rooting, the flowering-branches 1-2 feet high. Lower leaves broadly lanceolate, 6-9 inches long, upper ones narrower. Flowers in dense terminal panicles. Stamens and pistil on different flowers, but intermixed. Inner segments of the fruiting-perianth unequal, broad, about 2 or 3 lines long, and with 1 or 2 rigid teeth on each side near the base.

Common on banks of streams and muddy places; also in Victoria, South Australia, New South Wales, and Queensland. Fl. Nov.-Dec.

6. R. ACETOSELLA, *Linn* A small, erect, succulent herb, often becoming red, about 6 inches high. Leaves narrow-hastate, the basal lobes often very small, stalked, about 1-1½ inch long. Flowers small, numerous, in an elongated compound raceme or panicle, the stamens and pistils on different plants. Perianth-segments nearly equal, outer ones narrower, all thin and closing over the fruit.

Introduced, and very common in pastures and waste places. Common in Europe. Fl. spring and summer.

2. POLYGONUM.

Perianth of usually 5 segments, all equal or nearly so. Stamens 5-8. Style-branches 2 or 3. Stigmas usually capitate, minute.

A large and widely-spread genus.

Flowers in close axillary clusters ... ... 1. *P. aviculare.*
Inflorescence few-flowered, loose, branched ... ... 2 *P. strigosum.*
Flowers in short, dense, tolerably broad, axillary spikes . . .. 3. *P. prostratum.*
Flowers numerous, in more or less slender, pedunculate, axillary, or terminal spikes.
  Stipules bordered with long cilia.
    Glabrous, or with few hairs on stem and midrib 4. *P. minus.*
    Somewhat hirsute on most parts... ... ... 5. *P. subsessile.*
  Stipules without long cilia ... ... 6. *P. lapathifolium.*

1. P. AVICULARE, *Linn.* A prostrate spreading herb, the branches often 6 inches to 1 foot long. Leaves narrow-oblong, mostly about 1 inch long. Flowers pink or white, few together in the leaf-axils. Fruiting-perianth about 1½ line long. Nuts triangular.

Introduced, and widely dispersed. Common in Europe. Fl. spring and summer.

2. P. STRIGOSUM, *R. Br.* A wiry, spreading, ascending, sparely-branched herb, 2 or 3 feet long. Stems and midribs bearing few short reflexed hairs. Leaf-

margins and flower-stalks somewhat ciliated. Leaves lanceolate, with a broad lobed base in the larger ones, 1-3 inches long, shortly stalked. Inflorescence terminal or in the terminal axils, in a rather loose, slightly divided, few-flowered panicle in most Tasmanian forms, the termination of the panicle reduced to spikes in the typical form. Perianth-segments about 1½ line long. Nut rather swollen.

Common in many parts in the north; Deloraine, Apsley River; also in Queensland, New South Wales, and Victoria. It extends also to Eastern Asia and New Zealand. Fl. Nov.-Dec.

3. P. PROSTRATUM, *R. Br.* A small perennial with a prostrate woody stem and ascending or erect branches, 1-2 feet long. Leaves lanceolate to nearly linear ½-1½ inch long, shortly stalked. Stipules hairy on the surface. Flowers in short, rather loose, axillary or terminal spikes. Perianth about 1 line long. Style-branches 2. Nut biconvex.

Common in many parts of the north and central districts. It occurs throughout Australia and in New Zealand. Fl Nov.-Jan.

4. P. MINUS, *Huds.* A slender decumbent or sub-erect annual, often 1-2 feet long, glabrous in the typical form, but in this as well as in other details approaching its immediate allies. Leaves lanceolate, acute, narrowed into a very short stalk, 2 or 3 inches long. Stipules with long, slender, marginal cilia. Flowers in slender terminal spikes. Bracts often bearing marginal cilia. Perianth about ¾ line long, not glandular. Style-branches 2 or 3. Nuts obscurely 3-angled.

Common in the north. Throughout Australia. A common plant in the Northern Hemisphere. Fl. Oct.-Jan.

> The Tasmanian form departs rather from the type, in most specimens, in bearing strigose hairs on the midribs, and often on the margins of the leaves also.

5. P. SUBSESSILE, *R. Br.* A perennial with a woody base and erect branched stems of 2-3 feet in height, more or less clothed with short coarse hairs. Leaves lanceolate, acute, narrowed into a short stalk, mostly about 3 inches long Stipules bordered with long cilia. Flowers in slender terminal spikes Perianth about 1 line long, not glandular. Style-branches 2, rather long. Nut biconvex

Confined to the north; also throughout Eastern Australia. Fl. Nov.-Dec.

6 P LAPATHIFOLIUM, *Linn.* A tall erect annual, 1-2 feet high, usually glabrous, but often sprinkled in parts with strigose, pubescent, or glandular hairs. Leaves broadly lanceolate, acute, and contracted in a short stalk, mostly 3-4 inches long. Stipules without or with few marginal cilia. Flowers in terminal and terminal-axillary spikes, looser and broader than in its immediate allies. Perianth-segments about 1 line long, usually dotted with short glandular hairs. Style-branches 2. Nut flat, with slightly concave or convex surfaces.

Recorded from Port Dalrymple. (?)

It occurs throughout Eastern Australia, and is a common plant in the Northern Hemisphere. Fl. Nov.-Dec.

3. MUEHLENBECKIA.

Perianth of 5 segments, equal or nearly so. Stamens and pistil seldom perfect in the flowers of the same plant. Stamens usually 8. Ovary 3-angled. Style trifid. Nut enclosed in the perianth.

The genus is small, but widely spread in the Southern Hemisphere. It is closely connected to *Polygonum.*

Leaves 1-3 inches. Plant widely creeping ... ... 1. *M. adpressa.*
Leaves under ½ inch. Plant small, matted ... ... 2. *M. axillaris.*

1. M. ADPRESSA, *Meissn.* A prostrate creeping or climbing shrub, often covering the undergrowth to a considerable distance. Leaves ovate-lanceolate, with a cordate base, or nearly orbicular, from 1-3 inches long, on stalks half as long as the laminæ. Inflorescence loose at the ends of the branches. Flowers few together, in interrupted spikes or axillary clusters. Fruiting-perianth more or less succulent, white. Nut nearly globular.

Common on coasts. It occurs also throughout Southern Australia, and extends to New Zealand and South America. Fl. Nov.-Dec.

2. M. AXILLARIS, *Hook.* A small, wiry, prostrate, spreading shrub. Leaves ovate to orbicular, under ½ inch, stalked. Flowers small, solitary, or 2 or 3 together in the upper axils, or at the ends of the branches. Fruiting-perianth very slightly succulent. Nuts smooth, and prominently 3-angled.

Avoca, Western Tiers, &c. It occurs in New South Wales and Victoria, and extends to New Zealand. Fl. Dec.

ORDER LXV.—*MONIMIACEÆ.*

Perianth regular, combined with the floral ring at the base, the lobes spreading. Stamens in most genera very numerous. Pistil of free, usually numerous, carpels, with a single ovule in each. Fruit of several dry or fleshy carpels, on an expanded receptacle.

An order of trees and shrubs confined to the Southern Hemisphere. But few genera are represented in Australia, and Tasmania possesses but one.

ATHEROSPERMA.

Flowers diœcious or nearly so. Perianth with a tubular base, and 8 or 10 lobes in 2 rows. Stamens numerous. Anthers extrorse, with valvular dehiscence. Carpels numerous, in several rows, bearing long styles. Achenes dry, with long feathery styles, surrounded by persistent perianth-tube.

The genus consists of 2 species, one confined to Australian, the other to New Zealand distribution.

A. MOSCATA, *Lab.* An erect tree, bearing numerous lateral branches. Leaves opposite, shortly stalked, lanceolate to ovate, acutely toothed to entire, green above, pale beneath, 1-3 inches long. Flowers numerous towards the ends of the branches, but each one solitary, axillary, and on a stalk about ½ inch long; diœcious, but in many Tasmanian trees consistently monœcious. Each flower subtended by 2 broad enclosing bracts. Male: perianth with ovate lobes ⅓ inch long, stamens about 12. Female: shorter perianth-lobes, and numerous villous carpels, the inner ones only perfect, the outer row consisting of staminodia, and often (in Tasmania) developing perfect anthers on 2 or 3 of them.

Very common in forests, principally in hilly districts; also in Victoria and New South Wales. Fl. Sept.-Oct.

ORDER LXVI. *LAURACEÆ.*

Perianth regular, shortly or not at all tubular at the base. Segments 6, or fewer, all equal, or three outer ones smaller. Stamens normally twice as many as perianth-segments, but variable. Anthers 2 or 4-celled, each cell opening with an upturned valve. Ovary free, bearing a solitary suspended ovule. Style simple, usually short, with a capitate stigma. Fruit in most genera succulent, the perianth deciduous, but more often forming a succulent base to the ovary, or combined with and entirely enclosing it.

A large order, with a wide tropical distribution. Few genera extend to temperate climates.

CASSYTHA.

Perianth-segments 6, 3 outer ones short and broad. Stamens 12, in 2 series, always some of them imperfect. Anthers 2-celled. Ovary free at the time of flowering, becoming immersed in the enlarged fleshy perianth-tube, and crowned by the withered perianth-segments in fruit.

The genus consists entirely of wiry leafless parasites. With the exception of one or two species found in tropical parts of Asia, Africa, and America, it is entirely Australian.

Perianth under 1 line long. Fruit glabrous, ovoid ... 1. *C. glabella.*
Perianth 1⅓-2 lines long. Fruit globose.
  Plant pubescent ... ... 2. *C. pubescens.*
  Plant glabrous, or nearly so ... 3. *C. melantha.*

1. C. GLABELLA, *R. Br.* Stems long and slender, often red, trailing on the ground or over undergrowth, glabrous in all parts. Flowers usually yellow, few together in small stalked heads, lateral or in small irregular terminal racemes. Perianth under 1 line long. Fruit narrowly to broadly oblong, 2-3 lines long.

Very common in heathy and dry country. It occurs throughout Australia. Fl. all summer.

2. C. PUBESCENS, *R. Br.* A tough, spreading, or much-tangled parasite, often living at a considerable distance from the ground, pubescent in most parts. Flowers few together, in small, dense, shortly-stalked or sessile heads at intervals along the stems. Perianth about 1½ inch long. Fruit variable, mostly about 3 lines long, and from globose (with flattened ends) to ovoid, always pubescent.

Very common; also throughout Australia. Fl. spring and summer.

3. C. MELANTHA, *R. Br.* Similar in habit to the last, only more robust and glabrous, except the perianth, and that often so. Flowers few, in small, dense, shortly-stalked heads at intervals along the stems. Perianth about 2 lines long. Fruit broadly ovoid to globular, glabrous, 4 to nearly 6 lines long.

Near Launceston, George's Bay, Kelvedon, Bass Straits; also throughout extra-tropical Australia. Fl. Oct.-Nov.

ORDER LXVII. *PROTEACEÆ.*

Perianth deciduous, regular or irregular, consisting of 4 segments, more or less cohering either towards the base or apex. Stamens 4, opposite the perianth-segments, and usually inserted on them, the filaments incorporated with the perianth from close to the anther to nearly free to the base. Ovary 1-celled, with 1 or many ovules. Fruit various, usually a drupe or follicle. Seeds usually winged.

The order is fairly dispersed throughout the Southern Hemisphere, and in Australia contains a great number of genera consisting of most varied developments. In Tasmania it is but poorly represented.

Flowers in a dense cone-like spike.
  Cone ½ inch long. Leaves divided, pungent .. 1. *Isopogon*
  Cone 2-8 inches. Leaves entire or toothed ... 12. *Banksia*
Flowers in terminal or apparently terminal heads, spikes, or racemes.
  Leaves linear or cylindrical.
    Plant silky-white. Flowers in numerous narrow spikes. Fruit, a small nut ... ... 2. *Conospermum.*
    Flowers in short spikes or racemes. Fruit a pubescent follicle ... ... 7 *Orites.*

Flowers in small, terminal, or axillary clusters. Fruit a smooth follicle ... ... 8. *Grevillea.*

Leaves broad.

Flowers in a small broad raceme, on a long peduncle. Plant under 2 feet ... ... 3. *Bellendena.*

Flowers in axillary and terminal spikes. Leaves 3-6 inches long, toothed. Fruit fleshy ... ... 5. *Cenarrhenes.*

Flowers in numerous linear spikes. Leaves entire, narrow-oblong ... ... 4. *Agastachys.*

Flowers in short axillary and terminal spikes. Leaves toothed or entire. Fruit a pubescent follicle ... ... 7. *Orites.*

Flowers crimson, in a flat terminal head. Leaves oblong, entire ... ... 10. *Telopea.*

Flowers white, in large loose racemes. Leaves oblong or divided ... ... 11. *Lomatia.*

Flowers in small axillary clusters or solitary.

Flowers solitary. Fruit fleshy ... ... 6. *Persoonia.*

Flowers clustered. Fruit dry.

Fruit hard, woody. Leaves mostly cylindrical ... 9. *Hakea.*

Fruit a straight follicle. Leaves with recurved margins ... ... 8. *Grevillea.*

1. ISOPOGON.

Perianth regular, segments linear, the upper portion of the perianth falling off, leaving the base surrounding the ovary. Stamens blended with the perianth, the anthers only free towards the ends of the lobes. Ovary sessile, with a pendulous ovule. Fruit a small dry nut. Inflorescence cone-like.

The genus, which is entirely Australian, contains about 30 species; only one touches Tasmanian distribution.

1. CERATOPHYLLUS, *R. Br.* A small, much-branched, prickly shrub, from 1-2 feet. Leaves divided into rigid, linear, pungent segments, on stalks as long as the laminæ. Flowers numerous, in dense cone-like spikes, about ½ inch long, each flower subtended by a comparatively large scale-like bract that encloses the ripening nut.

Islands of Bass Straits; also in Victoria, South Australia, and New South Wales. Fl. Dec.

2. CONOSPERMUM.

Perianth with a conspicuous tube. Limbs (in Tasmanian forms) 2-lipped. Stamens inserted at about the base of the perianth-lobes, the lowest one abortive. Ovary inversely conical, crowned with a tuft of hairs, bearing a single pendulous ovule. Fruit a small dry nut.

The genus is confined to Australia, and principally to western districts.

C. TAXIFOLIUM, *Sm.* An erect shrub, in Tasmanian plants mostly 4-5 feet high, and pale with silky pubescence. Leaves linear to narrow-lanceolate, erect, broadest towards the apex, ½-1 inch long. Flowers numerous, in small clusters on long axillary peduncles towards the ends of the branches. Perianth about 3 lines long, lobes short: upper lip of 1 broad segment recurved at end, lower lip of 3 rather longer narrow lobes.

Spring Bay, near George's Bay. It occurs also in Queensland, New South Wales, and Victoria. Fl. spring and summer.

3. BELLENDENA.

Perianth regular; lobes free from the base, spreading. Stamens free from the perianth-lobes, inserted at their bases. Ovary fusiform. Style short, with 2 pendulous ovules. Fruit membranous, flat, very oblique.

The genus is confined to a single species, endemic in Tasmania.

B. MONTANA, *R. Br.* A small erect or sub-erect shrub, seldom above 1 foot high. Leaves obovate or obcuneate, with 3 or more terminal obtuse lobes, or narrower and entire, mostly about 1 inch long. Flowers small, numerous, in a rather dense terminal raceme, about 1½ inch long, and raised on a stalk usually 2-6 inches long. Perianth about 2 lines long, white or pink, on a pedicel as long as itself. Fruit about ½ inch long, red.

Common on most mountain-tops. Fl. Dec.-Jan.

4. AGASTACHYS.

Perianth regular; lobes free from the base, slender, slightly recurved. Stamens shorter than the perianth-segments, free from them, and inserted near their base. Ovary obscurely 3-angled. Style rather longer than the ovary, bearing a flat tongue-like stigma. Ovule solitary. Fruit coriaceous, irregularly 3-sided, with 1 narrow and 2 broad wings.

Confined to a single Tasmanian species.

A. OBOVATA, *R. Br.* An erect shrub, mostly 6-8 feet high. Leaves linear-oblong, shortly stalked, very obtuse, and slightly notched at the apex, thick, shining, 2-3 inches long. Flowers numerous, in many elongated spikes, 3 or 4 inches long, in the terminal axils, each flower subtended by a bract. Perianth 3-4 lines long, cylindrical in the bud; lobes linear, slightly recurving. Fruit nearly 3 lines long.

In forests, principally in the south and west. Fl. Dec.

5. CENARRHENES.

Perianth regular, segments free, spreading. Stamens short, inserted at the base of the segments. Ovary sessile, with a short slender style and a solitary ovule. Fruit a fleshy drupe.

Confined to a single Tasmanian species.

C. NITIDA, *Lab.* A small erect or spreading tree. Leaves narrow-oblong, shortly stalked, coarsely and remotely denticulate, mostly 3 or 4 inches long. Flowers in terminal axillary spikes, loose, few-flowered, 1-2 inches long. Perianth-segments ovate, about 2 lines long. Fruit purple, globose, ½-¾ inch diameter.

In forests, principally in south and west. Fl. Nov.-Dec.

6. PERSOONIA.

Flowers regular: segments nearly free, but often cohering in the lower portion, narrow, recurved. Stamens short, and inserted about the middle of the perianth-lobes. Ovary stalked, with a slender style, and bearing 2 or rarely 1 ovule. Fruit drupaceous.

A rather large genus, confined to Australia, except one species that occurs in New Zealand.

Leaves linear, pungent	1. *P. juniperina.*
Leaves spathulate, obtuse	2. *P. gunnii.*

1. P. JUNIPERINA, *Lab.* A sub-erect, much-branched, spreading shrub, often not exceeding 2 feet, from silky-hairy all over to almost glabrous. Leaves

narrow-linear, pungent, spreading, from $\frac{1}{2}$-1$\frac{1}{2}$ inch long. Flowers shortly stalked, solitary, axillary. Periauth yellow, cylindrical in the bud, about 3-4 lines long.

Common on heathy and hilly localities; also in Victoria, South Australia, and New South Wales. Fl. Dec.

2. P. GUNNII, *Hook.* An erect branched shrub, often 6-8 feet high. Silky or glabrous. Leaves thick, 1-2 inches long, spathulate, obtuse. Flowers shortly stalked, solitary, axillary. Perianth pale yellow or white, $\frac{3}{4}$ inch long. Fruit red-purple, $\frac{1}{2}$-$\frac{3}{4}$ inch in diameter.

Common on West Coast and on many mountains Fl. Dec.

7. ORITES.

Flowers regular; segments nearly free, but cohering below, the upper portion short and spreading. Stamens short, inserted about the middle of the perianth-lobes. Ovary sessile, with a slender style, and bearing 2 ovules. Fruit a hard, leathery, oblique follicle. Seeds with considerable wing on one side.

The genus contains few species, and is confined to Australian distribution.

Leaves flat, broad.
  Margins coarsely toothed ... . 1. *O. milligani.*
  Margins entire or nearly so, except on barren branches, then often coarsely toothed, but pale on under surface .. .. 2. *O. diversifolia.*
Leaves narrow, with revolute margins... ... ... 3. *O. revoluta.*
Leaves cylindrical, pungent .. .. 4. *O. acicularis.*

1. O. MILLIGANI, *Meissn.* A glabrous, rigid, much-branched shrub, 2 or 3 feet high, leaves narrowly to broadly oblong, thick and hard, coarsely toothed, mostly about 1 inch long. Flowers in terminal spikes, 1-2 inches long. Perianth 2-3 lines long. Fruit brown, pubescent, about $\frac{1}{2}$ inch long.

Mounts Sorell, Dundas, Read, La Perouse. Fl. Dec.

2. O. DIVERSIFOLIA, *R. Br.* An erect slightly-branched shrub, often 6 feet high, branches and stalks of leaves and infloresence closely brown-tomentose. Leaves from nearly linear to broadly ovate, rather thick, but with a protruding midrib, shiny above, pale and slightly hairy beneath, margins usually entire or with few teeth, chiefly towards the apex, but on barren branches the margins are very coarsely toothed, and sometimes almost lobed, 1-3 inches long. Flowers in axillary spikes, 1-2 inches long, towards the ends of the branches. Perianth about 2 lines long. Fruit brown, pubescent, $\frac{3}{4}$ inch long.

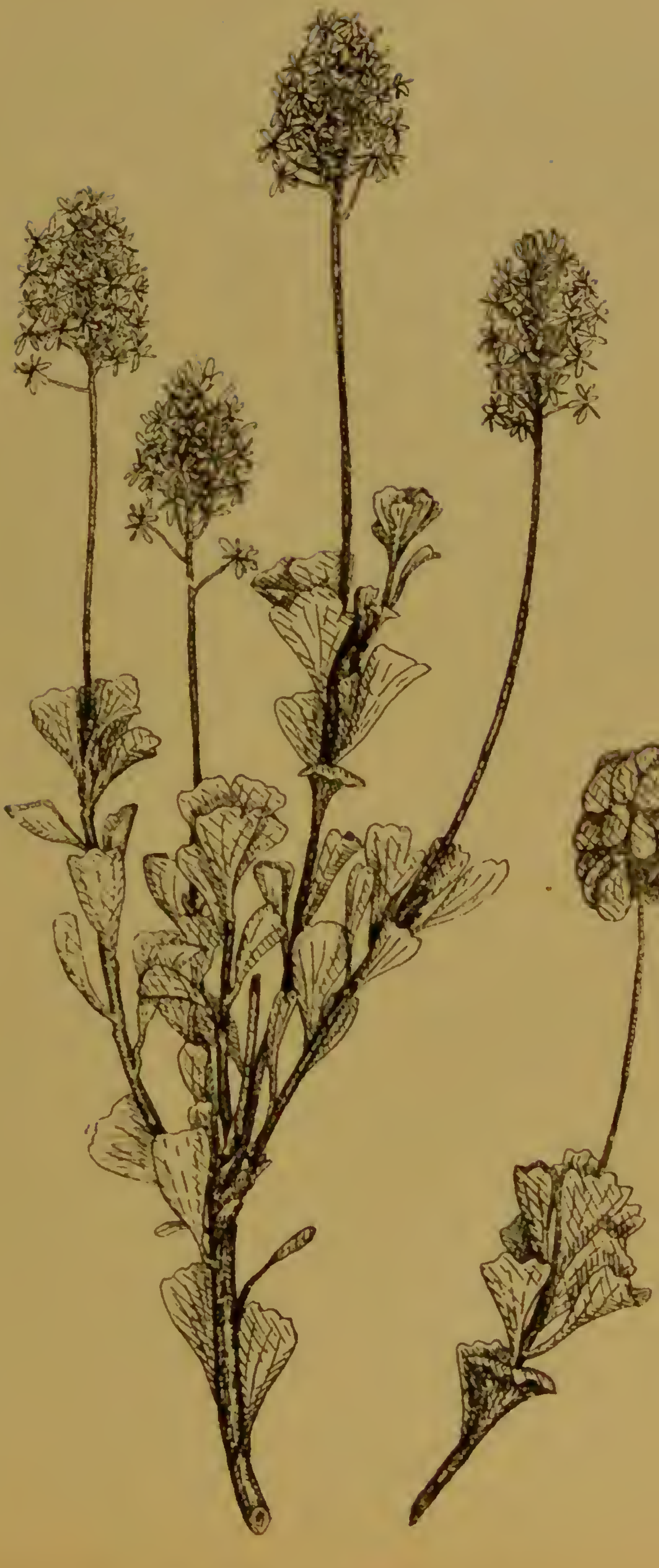
Common on most mountains. Fl. Dec.

3. O. REVOLUTA, *R. Br.* An erect much-branched shrub, 4 or 5 feet high, branches and stalks brown-tomentose. Leaves linear, with revolute margins, smooth or hairy above, densely tomentose below, $\frac{1}{2}$-1 inch long. Flowers in terminal spikes, about 1 inch long. Perianth 2-3 lines long. Fruit oblong, pointed, brown, very pubescent, $\frac{3}{4}$-1 inch long.

Common on mountains. Fl. Jan.

4. O. ACICULARIS, *R. Br.* An erect, branched, glabrous, yellowish shrub, 2-5 feet high. Leaves narrow-cylindrical, acutely pointed, 1-2 inches long. Flowers in small terminal and lateral spikes, seldom more than $\frac{1}{2}$ inch long. Perianth hardly 2 lines long. Fruit narrow-oblong with a very oblique point, glabrous or nearly so. Seed surrounded by the wing, which is rather more developed on one side.

Common on mountains. Fl. Dec.



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BELLENDENA MONTANA. *R. Br.*

8. GREVILLEA.

Perianth regular or nearly so, usually curved as maturing, the segments cohering and dividing first on the convex side, through which the style protrudes, the tips of the segments concave and separating last. Stamens without filaments, the anthers being sessile in the concave tips of the perianth-lobes. Ovary with usually a long filiform style, and bearing 2 ovules. Fruit an oblique, leathery, or rarely woody, follicle. Seed-wing annular or none.

A very large genus, of diverse forms, nearly confined to Australia. Only one species is found in Tasmania.

G. AUSTRALIS, *R. Br.* Usually an erect branched shrub and 2 or 3 feet high, but sometimes depressed and spreading. Leaves narrow-linear and pungent to nearly oblong, margin recurved to closely revolute, pubescent beneath, ½-2 inches long. Flowers in small terminal and axillary, rather dense, racemes. Perianth about 2 lines long, soon recurving and splitting along the upper side, the upper ends of the segments not separating till late. Style long, soon protruding from the split perianth. Stigma discoid. Fruit ovate, nearly regular, tipped by the style, leathery, about ½ inch long.

Found in most districts throughout the Island; also in Victoria and New South Wales. Fl. Dec.-March.

9. HAKEA

Perianth curving before maturity and splitting on the convex side, the style protruding. Stamens closely inserted into the concave tips of the perianth-lobes. Ovary with a long filiform style, the stigma minute on a conical or discoid expansion. Ovules 2. Fruit hard, woody, bivalved, usually turgid. Seeds with a broad lateral wing.

A large Australian genus, continuous with *Grevillea*.

Leaves cylinderical.
  Flowers pubescent.
    Fruit dagger-shaped .. .. 1 *H. pugioniformis.*
    Fruit recurved at the base and incurved at the apex ... . 2. *H. rostrata.*
    Fruit recurved at the base; apex short, straight 3. *H. epiglottis.*
  Flowers glabrous. Fruit ovoid.
    Fruit nearly 1 inch long. Flower-stalks pubescent
      Flowers about 1 line .. .. 4. *H. nodosa.*
      Flowers about 3 lines ... .. 5. *H. acicularis.*
    Fruit ½ inch .. .. 6. *H. microcarpa.*
Leaves flat, but very narrow 7. *H. ulicina.*

1. H. PUGIONIFORMIS, *Cav.* An erect much-branched shrub, 6-10 feet. Leaves cylindrical, rigid, very pungent, 1-2 inches. Flowers in small, sessile, axillary clusters. Perianth very pubescent, about 3 lines long, on a pubescent stalk of about the same length. Fruit about 1 inch long, broad and nodulated near the base, tapering to a long point.

Found in numerous localities. Grass-tree Hill to George's Bay, &c.; also Victoria, New South Wales, and Queensland. Fl. Oct.-Nov.

2. H. ROSTRATA, *F. v. M.* Erect, branched, 2-4 feet. Leaves cylindrical, rigid, pungent, 2-4 inches. Flowers in sessile axillary clusters. Perianth pubescent, 3 lines long. Fruit nearly 1 inch long, sigmoid, turgid.

George's Bay; also South Australia and Victoria. Fl. Oct.-Dec.

3. H. EPIGLOTTIS, *Lab.* Closely allied to *H. rostrata*, only the parts smaller. Leaves mostly 1-2 inches. Capsule about ½-¾ inch long, sigmoid, but the apex short and often not incurved.

Very common. Fl. Oct.-Dec.

4. H. NODOSA, *R. Br.* An erect shrub, attaining 12 feet, but flowering often when only 2 feet high. Leaves cylindrical or nearly so, pungent, very slender, 1-2 inches long. Flowers in small, sessile, axillary clusters, stalk and perianth together about 2 lines long. Fruit broadly ovate, rugose, about 1 inch long.

About George's Bay; also in Victoria and South Australia. Fl. late autumn.

5. H. ACICULARIS, var. *lissosperma.* A shrub or small tree, 6-20 feet high. Leaves cylindrical, pungent, 2-4 inches long. Flowers in small, sessile, axillary clusters. Flower-stalks slender, pubescent, about 3 lines long. Perianth glabrous, about as long as its stalk. Fruit broadly oblong, rugose to nearly smooth, 1-1½ inch long. *H. sericea*, Sch.

Very common, principally on hills; also in Victoria and New South Wales. Fl. Oct.

6. H. MICROCARPA, *R. Br.* A small shrub, seldom exceeding 4 feet. Leaves usually cylindrical or nearly so, but sometimes some or all flat, 1-3 inches long, pungent. Flowers in small, sessile, axillary clusters. Stalks and perianth glabrous or nearly so, each about 2½ lines long. Fruit obliquely obovate, ½-¾ inch long, usually smooth, except a small lateral protuberance towards the apex of each valve.

Common in numerous localities; also in New South Wales and Victoria. Fl. Nov.

7. H. ULICINA, *R. Br.* A tall shrub, but often flowering when hardly 3 feet high. Leaves linear, pungent, usually 4-8 inches long, but sometimes shorter and rather broader. Flowers numerous, in axillary clusters, usually quite glabrous. Perianth under 1 line long. Fruit broadly oblong, about ½ inch long, usually smooth.

Islands of Bass Straits; also New South Wales, Victoria, and South Australia. Fl. Oct.-Dec.

10. TELOPEA.

Perianth irregular, curved, splitting early on the convex side, allowing the style to protrude, tips of the perianth-lobes broad and concave. Stamens without filaments. Anthers sessile in the concave perianth-tips. Ovary on a long stalk, and bearing a long slender style. Ovules several, in 2 rows. Fruit a curved leathery follicle. Seeds with a long oblique wing.

A small genus, confined to Australia.

T. TRUNCATA, *R. Br.* An erect or spreading shrub, usually 5-10 feet high. Leaves spathulate-obovate, rather thick, obtuse or acute, narrowed to the base, margin often recurved, 2-4 inches long. Flowers in dense, flat, terminal heads, surrounded and intermixed with coloured bracts, each flower on a stalk about ¾-1 inch long. Perianth bright red, rarely white, nearly 1 inch long, lobes recurving immediately after separating. Fruit 2-3 inches long.

Very common, principally on mountains. Fl. Dec.

11. LOMATIA.

Perianth irregular, curved, soon splitting on the convex side, tips of the lobes thick and concave. Stamens without filaments. Anthers sessile in the perianth-tips. Ovary on a long stalk, and bearing a long oblique style. Ovules several, in two rows. Fruit a hard follicle, with a persistent oblique style, the valves widely opening when ripe. Seeds obliquely winged.

The genus contains but few species, and is found in South America as well as in Australia.

Leaves usually divided, smooth or silky beneath ... 1. *L. tinctoria.*
Leaves entire, densely tomentose beneath ... ... 2. *L. polymorpha.*

1. L. TINCTORIA, *R. Br.* An erect branched shrub, 3-5 feet high. Leaves usually twice divided into linear segments, but varying from that to entire and linear-lanceolate, mostly 3-6 inches long, generally hairless, but sometimes rather silky beneath. Flowers in long spreading racemes, either terminal or in the terminal axils. Flower-stalks ½-1 inch long. Perianth white, about ½ inch long. Fruit, including the style, about 1 inch long.

Very common, especially in poor country. Fl. Jan.

2. L. POLYMORPHA, *R. Br.* An erect branched shrub, 3-6 feet high. Leaves linear to oblong, obtuse or acute, and tapering at the base, margin usually recurved, mostly 2 inches long, densely tomentose on the under surface, at least when young, entire, or in rare instances lobed. Inflorescence as in the last, but the raceme shorter and less spreading. Fruit about 1 inch long.

Rather common on mountains, but descending to sea-level on the West Coast. Fl. Jan.

12. BANKSIA

Flowers in a dense cone. Perianth regular or nearly so, straight or curved, the tube splitting and the style protruding long before the lobes separate, tips thick and concave. Stamens without filaments. Anthers sessile in the perianth-tips. Ovary sessile. Style very long and slender. Ovules 2. Fruit woody, immersed in the persistent bracts and barren flowers. Seeds winged.

The genus contains nearly 50 species, and is purely Australian.

Leaves white beneath, lateral veins netted .	1. *B. marginata.*
Leaves green beneath, lateral veins parallel .	2. *B. serrata.*

1. B. MARGINATA, *Cav.* A shrub of variable habit, erect and spreading to depressed, often attaining tree-like dimensions. Mature leaves linear to oblong, obtuse or with a recurved point, margins recurved, 1-3 inches long, white and tomentose beneath, the lateral venation netted; immature foliage coarsely and acutely serrated. Flowering-cones oblong, 2-4 inches long. Perianth very slender, ¾ inch long. Style longer than the perianth. Fruiting-cone 2-4 inches long, the capsules protruding amongst the remains of barren flowers. *B. australis*, R. Br.

Very common in all situations; also in New South Wales, Victoria, and South Australia. Fl. spring and summer.

2. B. SERRATA, *Linn f.* A tall shrub or small tree. Leaves oblong-lanceolate, usually squared at the end, coarsely and acutely serrated, pale beneath, with parallel lateral veins, 3-6 inches long. Flowering-cones oblong, broad, 3-6 inches long. Perianth very slender, about 1 inch long. Style rather longer. Capsules globular, pubescent, 1 inch diameter, protruding as in last. *B. media*, Hook.

Sisters, near Rocky Cape; also New South Wales and Victoria. Fl. spring and summer.

ORDER LXVIII.—*THYMELIACEÆ.*

Perianth usually, and in all Tasmanian species, regular, gamopetalous, and 4-lobed, combined portion usually tubular. Flowers perfect, or occasionally diœcious. Stamens 2 or 4, except in few instances (not Tasmanian) inserted on the tube of the perianth. Ovary superior, usually 1-celled, with 1 pendulous ovule. Fruit dry or fleshy.

A large and widely-spread order.

Stamens 2, opposite perianth-lobes	1. *Pimelea.*
Stamens 4, alternating with perianth-lobes	2. *Drapetes.*

1. PIMELEA.

Perianth tubular, simple, or slightly thickened at the throat; lobes 4, spreading. Stamens 2, opposite two of the lobes.

The genus is confined to Australian and New Zealand distribution.

Plant small, densely tufted. Flowers solitary, axillary 13. *P. pygmœa.*
Plant erect. Flowers clustered.
Leaves copiously hairy on one or both sides.
Leaves densely hairy on both sides .. ... 2. *P. milligani.*
Leaves rather hairy on both sides ... ... 1. *P. cinerea.*
Leaves densely cottony on under surface ... ... 8. *P. nivea.*
Leaves densely silky on under surface ... ... 7. *P. sericea.*
Leaves lightly silky to glabrous.
Flowers numerous, in erect or drooping heads.
Plant prostrate. Perianth glabrous or nearly so... 10. *P. filiformis.*
Plant erect. Perianth silky.
Flower-head erect.
Branches glabrous. Leaves narrow. Flower white ... . 3. *P. glauca.*
Branches nearly glabrous. Leaves broad. Flowers yellow ... ... 15. *P. flava.*
Branches hairy. Leaves narrow, often hairy. Flowers white ... ... 6. *P. humilis.*
Flower-head drooping.
Anthers on conspicuous filaments, cells turning back to back after maturing. Bracts glabrous or nearly so.
Leaves narrow. ½-1 inch long ... ... 4. *P. linifolia.*
Leaves oblong, 1-3 inches long ... ... 5. *P. ligustrina.*
Anthers nearly sessile, cells still facing inwards after maturing. Bracts hairy inside ... 17. *P. stricta.*
Flowers few, in terminal, lateral, or axillary clusters.
Leaves lightly silky. ¼-½ inch long... ... ... 16. *P. curviflora.*
Leaves hairy on midrib only, ¾-2 inches ... ... 9. *P. drupacea.*
Leaves glabrous. Perianth glabrous or nearly so.
Flowers axillary. Leaves 1-3 inches ... .. 11. *P. axiflora.*
Flowers terminal and lateral. Leaves ½-¾ inch 12. *P. pauciflora.*
Flowers terminal. Leaves 2-3 lines long ... 14. *P. serpillifolia.*

1. P. CINEREA. *R. Br.* A slender sparely-branched shrub, mostly 2-5 feet high, more or less copiously silky-hairy on the branches, under surfaces of the leaves, and the flowers. Leaves opposite or nearly so, narrowly to broadly oblong, shortly stalked and acutely pointed, hairy beneath, glabrous above, ¾-1½ inch long. Flowers in terminal, or nearly terminal, few-flowered heads, not surrounded by differentiated leaves, usually bearing 2, sometimes 4, rarely 6, leaves as an involucre. Perianth about 2½ lines long, woolly-hairy on the outer surface, persistent round the fruit, or the upper portion falling when the fruit is nearly ripe. Fruit with a thin hard pericarp. *P. gunnii*, Hook.

Common chiefly on hills in the south and west. Fl. Jan.

2. P. MILLIGANI, ***Meissn.*** A small densely-branched shrub, white all over, with close tomentum. Leaves opposite, crowded at the ends of the branches, ovate or oblong, about ⅓ inch long, white, with tomentum on both surfaces. Flowers in terminal few-flowered heads, subtended by ordinary foliage leaves. Perianth about 2⅓ inches long, woolly-hairy outside, persistent round the fruit, or the upper portion falling as the fruit matures.

Towards the summits of Mounts Sorell and Owen. Fl. Dec.-Jan.

3. P. GLAUCA, *R. Br.* A small much-branched shrub, usually 1-2 feet high, branches and leaves quite glabrous. Leaves opposite, rather thick and concave, sessile, broadly or narrowly oblong, mostly ¼-¾ inch long. Flowers in terminal, medium-sized heads, surrounded by an involucre of four bracts, rather broader and larger than the foliage leaves, receptacle densely hairy. Perianth hairy, nearly ½ inch long, the tube very slender; lobes 1½ line long: the base persistent, the upper portion falling from just above the ovary. Fruit with a dry pericarp.

Very common on coasts; also nearly throughout the coast of Australia. Fl. Feb.-Mar.

4. P. LINIFOLIA, *Sm.* An erect branched shrub, from 1-3 feet high, glabrous, except the inflorescence. Leaves opposite, shortly stalked, linear to spathulate, ¼-1 inch long, concave in small-leaved forms, flat to convex with recurved margins in large-leaved varieties. Flowers in terminal, nodding, rather large heads, subtended by 4 large broad bracts that are hairless on both sides. Perianth ⅓ inch or more long, more or less silky-hairy, tube slender, lobes 2 lines long, receptacle densely hairy, lower portion of perianth persistent round the fruit. Fruit with a dry membranous pericarp. *P. spathulata*, Benth "Fl. Aust" (in part); *P. cernua*, Hook. "Fl. Tas" (in part).

Common in heathy land; also throughout Eastern and Southern Australia. Fl. spring and summer.

> The species is variable in robustness, and I cannot find in the field more constant characters separating the forms described as distinct in the "Fl. Aust."

5. P. LIGUSTRINA, *Lab.* An erect branched shrub, usually 4-6 feet high, glabrous or nearly so, except the inflorescence. Leaves opposite, broadly ovate to nearly linear, sessile, 1-2 inches long. Flowers numerous, in large, terminal, usually nodding, heads, subtended by 4-6 very broad bracts that are usually silky on the margin and inner surface. Perianth ½ inch long, tube very slender, lobes hardly 2 lines long, silky-hairy, the base persistent round the fruit. Stamens or pistil often immature in the same flower. Fruit with a dry membranous pericarp.

Common in most districts; also in New South Wales, Victoria, and South Australia. Fl. Dec.-Jan.

6. P. HUMILIS, *R. Br.* A small erect shrub, from a few inches to 1 foot high, silky on the branches and inflorescence, slightly so on the bracts, and often on the leaves. Leaves opposite, sessile, narrowly to broadly oblong, ¼-½ inch long. Flowers in medium-sized, erect, terminal heads, subtended by 4 or 6 bracts slightly broader than the foliage leaves, silky at least on the inner surface. Perianth silky-hairy, usually about ⅓ inch long, tube slender, lobes 1-2 lines long, base persistent round the fruit. Fruit with a dry membranous pericarp.

Very common, principally in dry places; also in Victoria, South Australia, and New South Wales. Fl. spring and summer.

7. P. SERICEA, *R. Br.* An erect branched shrub, usually 1-2 feet high, silky-hairy, except the upper surfaces of the leaves. Leaves opposite, nearly sessile, broadly oblong, about ½ inch long, under surface densely covered with silvery-silky hairs. Flowers in rather large, erect, terminal heads. Bracts not differing from foliage leaves. Perianth hardly ½ inch long, not differing in detail from that of *P. humilis*. Fruit also similar.

Common towards summits of mountains. Fl. Oct.-Jan.

8. P. NIVEA, *Lab.* An erect shrub, from 2-6 feet high, all parts except the upper surfaces of the leaves clothed with rather cottony hairs. Leaves opposite, nearly sessile, from orbicular to narrow-obovate, margins recurved, about ⅓ inch long. Flowers in rather large terminal heads, the subtending leaves not differing

from the rest of the foliage. Perianth about ⅓ inch long, densely hairy, tube slender, lobes about 2 lines long, base persistent round the fruit. Fruit with a dry pericarp.

Very common. Fl. spring and summer.

9. P. DRUPACEA, *Lab.* An erect shrub, of 4-6 feet, hairy on the branches and inflorescence, slightly so on the leaves. Leaves opposite, shortly stalked, narrowly to broadly oblong, ½-2 inches long, margin slightly recurved, under surface usually obscurely hairy on the midrib only. Flowers few, in small terminal heads, often appearing axillary. Perianth silky, about 3 lines long, tube slender; only the base below the fruit persistent, the upper portion thrown off as the fruit enlarges. Fruit a black fleshy drupe.

Very common; also in Victoria. Fl. Sept.-Dec.

10. P. FILIFORMIS, *Hook.* A prostrate spreading shrub, of 1-2 feet, glabrous or nearly so. Leaves opposite, nearly sessile, narrow-oblong, about ½ inch long. Flowers numerous, in dense terminal heads, the floral leaves not differing from the foliage. Perianth glabrous or nearly so, about 2 lines long, the base persistent round the fruit. Fruit with a dry pericarp.

Near Launceston, Piper River. Fl.-Nov.

11. P. AXIFLORA, *F. v. M.* An erect sparely-branched shrub, glabrous. Leaves opposite, shortly stalked, linear to lanceolate, acute, 1-3 inches long Flowers in small axillary clusters, perfect stamens and pistils not developing on the same plant. Staminate flowers about 1½ line long, with spreading lobes and an abortive pistil. Pistillate flowers smaller, with very short erect lobes, persistent round the fruit. Fruit with a dry pericarp.

Bass Straits; also in New South Wales and Victoria. Fl. Oct.-Nov.

12. P. PAUCIFLORA, *R. Br.* A much-branched, glabrous, slender shrub, the branches often many feet long. Leaves opposite, nearly linear, ½-1 inch long. Flowers few together, terminating small lateral branches as well as the main shoots, diœcious, quite glabrous. Staminate flowers about 2 lines long, with spreading lobes. Pistillate flowers smaller, with very small erect or spreading lobes, and an exserted style, persistent round the fruit. Fruit succulent.

George's Bay, Thomas Plains. St. Patrick River, Deloraine. Principally near rivers in the north and east; also Queensland, New South Wales, and Victoria. Fl. Dec.-Jan.

13. P. PYGMÆA, *F. v. M.* A small, prostrate, much-branched shrub, forming dense moss-like patches, nearly glabrous. Leaves mostly opposite, ovate, concave, about 1½ line long. Flowers solitary in the upper axils, diœcious. Staminate flowers 2 lines long, with spreading lobes Pistillate flowers rather smaller, persistent round the fruit. Fruit with a membranous pericarp.

Summit of the western mountains and Lake plateau. Fl. Dec.

14. P. SERPILLIFOLIA, *R. Br.* A small, densely-branched, usually glabrous, shrub. Leaves opposite and alternate, nearly oblong, about ¼ inch long, rather thick. Flowers in rather small terminal heads, the surrounding leaves not differing from the foliage leaves, diœcious. Perianth glabrous, yellowish. Staminate flowers about 1 line long, with spreading lobes. Pistillate flowers smaller, with small erect lobes, persistent round the fruit. Fruit with a fleshy pericarp.

Islands of Bass Straits, Blue Tier; also Victoria, South Australia, and Western Australia. Fl. Nov.-Dec.

15. P. FLAVA, *R. Br.* An erect sparely-branched shrub, 2-4 feet high, the branches and inflorescence silky-hairy. Leaves opposite, broad to narrow-oblong, rather thick, ¼-½ inch long. Flowers in medium-sized terminal heads, subtended by 4 rather large bracts, diœcious. Perianth usually yellow. Staminate flower with a narrow silky tube and spreading lobes, 3-4 lines long,

at least in Tasmanian specimens. Pistillate flowers much smaller, with nearly erect lobes, persistent round the fruit. Fruit with a dry pericarp.

New Town Rivulet: East Coast, near Launceston, &c., but not common; also New South Wales, Victoria, South Australia, and West Australia. Fl. Nov.-Jan

16. P. CURVIFLORA, *R. Br.* A small, erect, wiry shrub, slightly silky in most parts. Leaves mostly alternate, shortly stalked, narrow-oblong, ¼-½ inch long, margins often slightly recurved. Flowers few, in terminal heads, mostly on very short side-branches, in many copiously flowering specimens some of the heads truly axillary; all flowers apparently bearing perfect pistils, but the stamens sometimes abortive. Perianth usually yellowish, silky, the tube very slender in the outer flowers, often curved, but not constantly so, about 2-3 lines long; lobes thickened, slightly spreading, about 1 line long; rather more than half the tube persistent round the fruit. Fruit with a dry pericarp. *P. gracilis*, Hook.

Near Launceston, St. Patrick River, George's Bay, near New Norfolk, and many localities on the banks of streams; also New South Wales, Victoria, South Australia, and Queensland. Fl. spring and summer.

17. P. STRICTA, *Meissn.* A slender erect shrub, 2-3 feet high, glabrous, except the inflorescence. Leaves opposite, shortly stalked, narrow-lanceolate, ¼-1 inch long. Flowers in rather large, terminal, drooping heads, subtended by 4 large closely-appressed bracts that are silky on their upper surfaces. Perianth silky, about ⅓ inch long, tube slender, the greater part persistent round the fruit. Stamens with very short filaments, the anthers nearly sessile, connective thick, the cells remaining parallel, and not turned back to back after dehiscing, as in ***P. linifolia*** and allied forms. Fruit with a dry pericarp.

Swanport; also in Victoria, South Australia, and New South Wales. Fl. summer.

2. DRAPETES.

Perianth tubular, with scales at the throat opposite the lobes. Stamens 4, alternate with the lobes, inserted at the throat.

A genus of very few species, but with a wide distribution in the Southern Hemisphere.

D. TASMANICA, *Hook.* A small, prostrate, spreading, much-branched, herb-like under-shrub. Leaves alternate, linear, concave, 1½ line long. Flowers few together, in small terminal heads, receptacle densely hairy. Perianth hairy, about 2 lines long, with spreading lobes. Fruit an ovate drupe, about 1½ line long.

Common on the summit of mountains in the west: La Perouse, Ben Lomond, &c. It occurs also in Victoria, and is doubtfully distinct from *D. dieffenbachii*, of New Zealand. Fl. Dec.-Jan.

ORDER LXIX. *EUPHORBIACEÆ.*

Flowers diœcious. Perianth deficient or calyx-like or petaloid, or developing a distinct calyx and corolla. Stamens from solitary to very numerous. Ovary superior, usually of 3 more or less combined carpels, rarely fewer or more. Styles as many as carpels. Ovules 1 or 2 in each carpel, pendulous. Fruit capsular, and dividing into carpels, or succulent with free pyrenes.

The order is very large, but natural, though containing many and varied forms. It attains its greatest development, both in numbers and individual size, in the tropics. The Tasmanian genera are nearly all confined to Australian distribution.

Herbs.
  Erect or ascending, very succulent. Ovary on a long weak peduncle … … 1. *Euphorbia*
  Procumbent. Ovary normal … … … 2. *Poranthera*.

Shrubs or under-shrubs.
  Leafless or nearly so. Stems angled ... ... 8. *Amperea.*
  Leaves linear or nearly so.
    Leaves in clusters of 3 ... . 3. *Micrantheum.*
    Leaves solitary, with closely-revolute margins.
      Petals ½ inch long, white ... ... 6. *Ricinocarpus.*
      Petals none ... ... 7. *Bertya.*
  Leaves oblong, 1-3 inches long. Stamens numerous 5. *Beyeria.*
  Leaves oblong, under 2 lines. Stamens 6... ... 4. *Pseudanthus.*
  Leaves oblong to nearly orbicular, 2 lines to ¾ inch
    long. Stamens 3 ... ... 9. *Phyllanthus.*

1. EUPHORBIA.

Flowers very obscure, and reduced to a simple organ only, but many flowers clustered within an involucre, together forming a flower-like head. Staminate flowers about 10, each consisting of a single stamen without any perianth. Pistillate flower solitary in the head, consisting of a 3-celled ovary on a long flaccid stalk.

The genus is large, and has as wide a distribution as the order.

Flower-heads axillary ... ... 1. *E. drummondii.*
Flower-heads in terminal umbels.
  Leaves dentated. Involucral glands round ... 2. *E. helioscopia.*
  Leaves entire. Involucral glands crescented . 3. *E. peplus.*

1. E. DRUMMONDII, *Boiss.* A prostrate spreading herb, with a perennial rootstock. Leaves opposite, with interpetiolar stipules, broadly oblong-oblique, entire. or serrated. 2-4 lines long. Flower-heads very small, shortly stalked in the upper axils. Involucre about ½ line long. bearing entire or fringed glands.

Swanport; also throughout Australia. Fl. spring and summer.

2. E. HELIOSCOPIA. *Linn.* A robust erect annual, sparely branched, except the inflorescence. Leaves alternate, obovate. serrated, ½-¾ inch long. Inflorescence a compound umbel, the primary rays 5. and subtended by 5 large leaf-like bracts. Involucre bearing 4 or 5 entire round glands on the margin.

An introduced European weed; widely dispersed with cultivation. Fl. nearly all the year.

3. E. PEPLUS, *Linn.* A similar plant to the last, but of less robust habit. Leaves entire. Rays and bracts 3 or irregular. Involucral glands crescent-shaped.

Introduced and dispersed with the last. Fl. nearly all the year.

2. PORANTHERA.

Calyx petaloid, deeply 5-lobed. Petals usually present but small. Stamens 5, opposite the calyx-segments. Anthers more or less 4-celled, each cell opening in a terminal pore. Ovary very rudimentary in the staminate flowers; broad, depressed-globular, 6-lobed. 3-celled. in the pistillate ones. Styles 3, each deeply bifid. Fruit capsular.

A purely Australian genus, of few species; all herbs.

P. MICROPHYLLA, *Bron.* A small, prostrate, spreading annual. Leaves obovate to linear, obtuse and tapering into a stalk, alternate, mostly ¼-½ inch long. Flowers white, about 1 line diameter, in small corymbs. both pistillate and staminate on the same plant.

Very common, principally in dry poor land. It occurs throughout Australia. Fl. spring and summer.

3. MICRANTHEUM.

Calyx petaloid, of 6 segments, the inner ones rather larger. Stamens 3-9. Anthers opening longitudinally. Ovary rudimentary in the staminate, 3-lobed and 3-celled in the pistillate ones. Fruit capsular.

A genus of only two species, limited to Australian distribution.

M. HEXANDRUM. *Hook.* An erect much-branched shrub, 5-10 feet high. Leaves in clusters of 3, shortly stalked, linear to oblong, ¼-½ inch long. Flowers solitary or few together, in the upper axils, staminate flowers on a short slender stalk, pistillate ones sessile or nearly so, both usually on the same plant. Perianth white, about 2 lines diameter. Fruit broadly ovate, about ⅓ inch long, each carpel with a short, thick, curved style.

Near Launceston, North-West Coast, near George's Bay, East Coast, &c.; also in New South Wales, Victoria, and South Australia. Fl. Sept.-Mar.

4. PSEUDANTHUS.

Calyx petaloid, of 6 nearly equal segments, or 1 segment reduced or absent. Staminate flowers with 3, 6, or many stamens and a rudimentary pistil. Anthers opening outwards. Pistillate flowers with a 2 or 3-lobed ovary. Styles thick, diverging. Cells 2 or 3, with 2 ovules in each. Fruit a 1-celled, 1-seeded capsule. Flowers axillary, solitary or few together.

The genus contains few species, and is limited to Australia.

P. OVALIFOLIUS, *F. v. M.* A densely-branched, low, rigid shrub. Leaves mostly alternate, shortly stalked, broadly to narrowly oblong, concave, 1-2 lines long. Both flowers on the same plant. Perianth 1 line long. Staminate flowers with 6 stamens, shortly stalked. Pistillate flowers sessile.

Flinders Island; also in Victoria, New South Wales, and Queensland. Fl. spring and summer.

5. BEYERIA.

Staminate flowers with 4 or 5 petaloid segments. Petals small, usually (but not always) similar in number. Stamens numerous, on a central cushion. Filaments short. Anthers opening outwards. Pistil quite absent. Pistillate flower with a smaller, less petaloid, calyx. Ovary 3-celled, with 1 ovule in each. Stigma short, usually broad. Fruit capsular, usually 3-lobed.

The genus is limited to Australia.

B. VISCOSA, *Miq.* A tall, erect, much-branched shrub, usually 10-15 feet high. Leaves alternate, oblong to almost linear, tapering into a stalk below, rather pale on the under surface, mostly 1-2 inches long. Flowers axillary or terminating short lateral branches, staminate flowers few together, pistillate ones solitary. Pistillate flowers with a rather long stalk, much thickened upwards. Ovary covered with viscid glands. Stigma short, spreading, cup-shaped. Fruit hard, globular 3-lobed, about ¼ inch diameter. *B. oblongifolia* and *B. backhousii*, Hook. "Fl. Tas." *B. opaca*, F. v. M., included.

Very common: also extra-tropical Australia. Fl. Sept.-Dec.

6. RICINOCARPUS.

Calyx usually of 5 segments. Petals as many as the calyx-lobes, sometimes none. Staminate flowers with numerous stamens, united in a central column. Filaments shortly free. Anthers opening outwards. Pistil quite absent. Pistillate flowers with a 3-celled ovary and 3 deeply bifid styles. Fruit capsular, dividing into its component carpels.

A purely Australian genus.

R. PINIFOLIUS, *Desf.* An erect branched shrub, about 3 feet high. Leaves mostly alternate, shortly stalked, linear, acute, margins closely revolute, about 1 inch long. Flowers terminal, few together, each on a slender stalk, usually one pistillate mixed with 5 or 6 staminate flowers, but occasionally only one kind in a cluster. Petals white, obovate, about ½ inch long. Capsule nearly globular, rough, ½ inch diameter. *R. major*, J. Muell., included.

Near the coast in the north and east: also in Eastern Australia from Queensland to Victoria. Fl. Oct.-Dec.

7. BERTYA.

Calyx in the staminate flower petaloid, 5-segmented. Stamens numerous, united in a central column. Filaments shortly free. Anthers opening outwards. Pistil absent. Calyx of pistillate flower similar, but smaller. Ovary 3-celled, with 1 ovule in each. Styles 3, divided deeply into usually 3 branches. Fruit capsular, oblong, 1-celled, and usually 1-seeded.

A purely Australian genus.

B. ROSMARINIFOLIA, *Planch.* A much-branched erect shrub, of 6-8 feet, the young parts stellate-tomentose. Leaves alternate, sessile, linear, margins closely revolute, mostly about ½ inch long. Flowers axillary, solitary or few together, on very short stalks, and a cluster of bracts close below the calyx, about 2 lines diameter, both kinds on the same plant. Ovary densely villous.

South Esk and Nile Rivers; also in New South Wales. Fl. Oct.-Nov.

8. AMPEREA.

Calyx in the staminate flowers deeply divided into 3-5 petaloid segments. Stamens 10 or fewer, free or nearly so. Pistil quite absent. Pistillate flower with a less petaloid calyx and a 3-celled ovary. Styles 3, bifid. Fruit capsular, the component carpels separating, each bearing 2 short erect processes towards its apex.

An Australian genus, of few species, and all but the one spreading to Tasmania confined to West Australia.

A. SPARTIOIDES, *Bron.* An erect or ascending herbaceous under-shrub, usually 1-2 feet high, numerous simple angled branches arising from a woody base. Leaves often absent, narrow-oblong to linear, usually toothed, mostly ¼-½ inch long, solitary at the distant nodes when present. Flowers in small, nearly sessile, clusters at the nodes. Staminate flowers rather numerous. Pistillate ones either solitary or few together or surrounded by staminate ones, each subtended by a few broad bracts. Perianth about 1 line long. Stamens about 8.

Very common in poor heathy land and on hills. It occurs also in New South Wales, Victoria, South Australia, and Queensland. Fl. Nov.-Jan.

9. PHYLLANTHUS.

Calyx more or less, 6 or 5, segmented, in the pistillate flowers narrower and less petaloid than in the staminate ones. Stamens mostly 3, united in a central column or free. Ovary 3 or more celled, with 2 ovules in each cell. Fruit a capsule, splitting into its component carpels.

A large genus, common in tropical and warmer temperate parts.

Leaves under ½ inch ... ... 1. *P. australis.*
Leaves ½-¾ inch ... ... 2. *P. gunnii.*

1. P. AUSTRALIS, *Hook.* A small under-shrub, with a woody base and very slender depressed or erect branches, few inches high. Leaves alternate, nearly sessile, distant, and (chiefly towards the ends of the branches) oblong, mostly 2-3 lines long. Flowers solitary or few, in the axils, on stalks from ½-1½ line long. Perianth about 1 line diameter. Capsule about 2 lines diameter.

In many parts principally in the northern and central districts, Mount Direction; also South Australia and New South Wales. Fl. Oct.-Dec.

2. P. GUNNII, *Hook.* A tall, erect, much-branched shrub. Leaves in two opposite rows, alternate, shortly stalked, broadly oblong to nearly orbicular, mostly ½-¾ inch long. Flowers few together, in the axils, for a considerable length of the branches, usually 3 or 4 staminate and 1 pistillate flower in each axil, all on stalks 1-4 lines long. Perianth rather more than ½ line diameter. Capsule about 2 lines diameter.

Principally on the North Coast, St. Marys, George's Bay, Glenorchy; also in New South Wales, Victoria, and South Australia. Fl. Nov.

ORDER LXX. *URTICACEÆ.*

Flowers seldom bearing perfect stamens and pistil. Perianth calyx-like, mostly of 3-5 segments. Stamens in most cases similar in number to and opposite the calyx-lobes, occasionally fewer. Ovary superior, 1-celled, with 1 erect or pendulous ovule. Styles 2, free or partially united, sometimes reduced and tufted. Fruit a small dry or succulent nut or drupe.

The order is very large, and is represented almost throughout the world. In warmer climates species often attain the dimensions of large trees.

Leaves opposite, ovate, bearing stinging hairs.
  Flowers many together ... . 3. *Urtica.*
Leaves alternate. Flowers few together.
  Leaves entire... ... ... 1. *Parietaria.*
  Leaves toothed ... ... 2. *Australina.*

1. PARIETARIA.

Complete and incomplete flowers on the same plant. In complete and staminate flowers the perianth is deeply lobed, with as many stamens as lobes; in the purely pistillate flowers the lobes are short, and the perianth-tube encloses the ovary. Fruit dry.

The distribution is world-wide.

P. DEBILIS, *Forst.* A depressed or ascending succulent annual, slender, 6 inches to 1 foot high, more or less pubescent. Leaves alternate, stalked, broadly ovate, entire, lateral veins conspicuous, few, the lowest pair nearly as conspicuous as the midrib, ¼-1 inch long. Flowers in small, shortly-stalked, axillary clusters. Perianth nearly 1 line long, mostly 4-lobed. Stigma nearly sessile, tufted.

Landfall Creek, near Launceston, and other localities in the north. It occurs throughout Australia, and has nearly as wide a distribution as the genus. Fl. spring and summer.

2. AUSTRALINA.

Stamens and pistil on separate flowers on the same plant. Staminate flower with an irregular, nearly hood-like, perianth, and a single stamen. The filament is long and bent on itself, upon maturity suddenly straightening and scattering the pollen. Pistillate perianth tubular, enclosing the ovary. Fruit dry, enclosed in the persistent perianth.

The genus contains about 4 species, only one of which is found outside Australian and New Zealand distribution.

Leaves under 1 inch, very broad ... . *A. pusilla.*
Leaves 1-2 inches, ovate . . . . *A. muelleri.*

1. A. PUSILLA, *Gaud.* A small, succulent, creeping herb, rooting at the nodes. Leaves alternate, stalked, nearly orbicular, bordered by few coarse blunt teeth, mostly ¼-½ inch long. Flowers few together in the axils, perianth ½-¾

line long, each on a very short stalk, or the males often with 2 flowers on a common stalk. Fruit dry, compressed, about $\frac{1}{2}$-$\frac{3}{4}$ line long.

Very common in damp places and sides of creeks, especially in hilly situations. It occurs also in New Zealand. Fl. spring and summer.

2. A. MUELLERI, *Wedd.* A rather robust, succulent, depressed, and ascending herb. Leaves alternate, stalked, the lower ones often small and orbicular, the upper ones ovate or elliptical, coarsely and bluntly toothed, 1-2 inches long. Flowers in sessile axillary clusters, the staminate ones 2-4, on a very short peduncle, the pistillate ones more numerous. Perianth and fruit not differing from *A. pusilla*.

In damp situations on the southern slopes of Mt. Wellington. It grows with *A. pusilla*, without developing intervening forms. It occurs also in Victoria. Fl. Nov.-Dec.

3. URTICA.

Stamens and pistil on separate flowers. Staminate flowers with a deeply 4-segmented perianth, 4 stamens, and a rudimentary pistil. Pistillate flower with the perianth deeply divided into 4 segments, of which 2 are much smaller than the others. Ovary with a sessile tufted stigma. Fruit dry, surrounded by the persistent perianth.

The genus is widely spread in temperate regions.

Leaves mostly cordate at the base. Flowers in rather loose divided panicles ... . 1. *U. incisa.*
Leaves narrowed at the base. Flowers in short spikes or panicles. ... ... 2. *U. urens.*

1. U. INCISA, *Poir.* A coarse perennial, decumbent at the base, with erect stems, often many feet high, clothed with coarse stinging hairs. Leaves opposite, ovate to lanceolate, the broad ones at least with a cordate base, stalked, margin coarsely and acutely toothed, mostly 2-3 inches long. Inflorescence axillary, in usually branched panicles, bearing only staminate or pistillate flowers in the same panicle. Perianth about $\frac{3}{4}$ line long.

Common in damp woods. It occurs nearly throughout extra-tropical Australia, is common in New Zealand, and is closely related to *U. dioica*, Linn., of the Northern Hemisphere. Fl. spring and summer.

2. U. URENS, *Linn.* A succulent annual, decumbent, with erect stems, usually 1-2 feet high, clothed with coarse stinging hairs. Leaves opposite, stalked, more or less elliptical, narrowed at the base, coarsely and acutely toothed, mostly 1-2 inches long. Inflorescence axillary, in short, rather dense, panicles or racemes. Staminate and pistillate flowers mixed in the same cluster. Perianth similar to *U. incisa*, only the larger divisions of the pistillate flowers usually bear a stinging hair about their centre.

A common European weed. Introduced, and widely spread. Fl. spring and summer.

ORDER LXXI. *CASUARINEÆ.*

Staminate flowers few together, in the sheaths of branch segments, forming terminal cylindrical spikes. Pistillate flowers very numerous, in small dense cones. Staminate flower consisting of a single stamen. Pistillate flower without a perianth, contained in the axil of a bract and 2 bracteoles, and consists of a minute 1-celled ovary bearing 2 ovules. The style with 2 long filiform branches. Fruit in a compact woody cone, the bracteoles enlarging, enclosing the ovary, forming 2 lateral valves that open when the fruit is ripe.

The order contains but 1 genus, and is confined to the Southern Hemisphere; it is principally Australian.

CASUARINA.

Shrubs or trees without apparent leaves, the branches numerously articulated, each segment surrounded at the base by a toothed sheath. Branches and flowers whorled, and corresponding in number to the teeth of the sheaths.

Teeth of the sheaths usually 9-12. Cone-valves very prominent, acute.	
Branchlets drooping. Valves of cone smooth on back	1. *C. quadrivalvis.*
Branchlets erect. Valves with a very prominent dorsal point	4. *C. bicuspidata.*
Teeth of sheaths 6-8. Cone-valves, if prominent, obtuse.	
Valves prominent, obtuse	2. *C. suberosa.*
Valves hardly protruding, round on margin ...	3. *C. distyla.*

1. C. QUADRIVALVIS, *Lab.* A small much-branched tree, usually 10-20 feet high, the branchlets usually drooping. The younger segments conspicuously striate, sheath with 9-12 acute teeth. Flowers usually diœcious, but not always so. Staminate spikes often 2-4 inches long; when mature the sheaths do not overlap. Fruit cone 1-1½ inch long, oblong; valves triangular, acute, and very prominent. *C. stricta*, Ait.

Very common. It occurs also in New South Wales, Victoria, South Australia, and West Australia. Fl. Sept.-Oct.

2. C. SUBEROSA, *O. & D.* A small much-branched tree, mostly 10-20 feet high, the branchlets erect. The younger branchlets slender, finely striate, the sheath bearing 6-8 rather broad acute teeth, all parts quite glabrous. Flowers monœcious. Staminate spikes ½-¾ inches long, rather compact, but the sheaths of the mature spike not overlapping. Fruit cones about 1 inch long, valves prominent, obtuse.

Very common; also in Queensland, New South Wales, Victoria, and South Australia. Fl. Oct.-Nov.

3. C. DISTYLA, *Vent.* An erect, branched, rigid shrub, usually 4-6 feet high, the branchlets erect, often pubescent. Sheath bearing 6-8 broad teeth. Flowers diœcious. Staminate spikes usually 1-1½ inch long. Fruit cones ¾-1 inch long, oblong, the valves hardly protruding, very obtuse or rounded on the margin.

Common, principally on hills and in heathy places; also throughout extra-tropical Australia. Fl. Sept.-Oct.

4. C. BICUSPIDATA, *Benth.* A small much-branched tree, the branchlets erect and striate, sheaths with 9-12 slender acute teeth. Staminate spike 1-2 inches long. Fruit cone 1-1½ inch long; the valves prominent, acute, each one bearing a long prominent protuberance on its back.

Bass Straits; also in West and South Australia. Fl. spring.

ORDER LXXII.—*CUPULIFERÆ.*

Flowers monœcious. Staminate: in spikes, each consisting of an irregular obscure perianth and usually few stamens. Pistillate: solitary or few together, surrounded by numerous free or combined bracts. Perianth tubular, usually

6-lobed. Ovary inferior. Fruit a nut or nuts buried at the base, in a cup formed of the combined bracts, or completely enclosed.

A large and important order of trees, confined to the Northern Hemisphere, except a few species of *Fagus*.

FAGUS.

Staminate spikes small, globular, and pendulous, rarely reduced to a single flower, each flower developed within a bract bearing a 4 or 6-lobed tubular perianth and 8-16 stamens with long filaments. Pistillate flowers few, 2-4, in a nearly sessile spike, surrounded by numerous bracts. Ovary 3-celled, with 2 ovules in each. Nuts 2-4, angled, enclosed in a hard prickly involucre that opens in 4 valves.

A small genus, that occurs in temperate regions of both Hemispheres.

Leaves deeply sulcate on the surface ... ... 1. *F. gunnii.*
Leaves flat ... ... 2. *F. cunninghami.*

1. F. GUNNII, *Hook.* A spreading, wiry, much-branched shrub, 5 or 6 feet high, the branchlets somewhat tangled. Leaves alternate, shortly stalked, very broadly ovate and obtuse to nearly orbicular, thick, deeply sulcate on the surface, the midrib and veins bearing strigose hairs, mostly about $\frac{1}{2}$ inch long, falling in winter. Staminate flowers solitary, but clustered at the ends of the branches, about 2 lines long. Stamens 6-8. Fruiting involucre covered with membranous free tips of the bracts, solitary in the upper axils, about 3 lines long. Nuts 3, the outer two 3-winged, the central one flat.

On mountain-summits towards the west, Mount La Perouse, Mount Field, Cradle Mountain. Fl. Dec.

2. F. CUNNINGHAMI, *Hook.* An erect much-branched tree, often exceeding 100 feet, but at high altitudes flowering while still shrubby. Leaves alternate, shortly stalked, broadly ovate to cordate, thick, flat, coarsely obtusely toothed, mostly $\frac{1}{4}$-$\frac{3}{4}$ inch long. Staminate flowers solitary, shortly stalked, axillary. Stamens 8. Pistillate flowers 3, in a sessile involucre of combined bracts in the upper axils. Fruiting involucre rough, with the linear, free tips of the bracts, about 3 lines long. Nuts 3, the outer two 3-angled, the central one flat.

Very common; also in Victoria. Fl. Dec.

ORDER LXXIII.—*SANTALACEÆ.*

Perianth with a tubular short base that is more or less combined with the ovary, and 3-5 short spreading lobes. Stamens as many as and opposite the lobes. Ovary from nearly free to almost entirely combined with the perianth-tube, 1-celled, with 2-5 ovules, only one of which attains maturity. Stigma sessile or borne on a short style, capitate. Fruit with a dry or succulent pericarp.

The order has a most extensive distribution, but is principally temperate.

Leaves linear, about 1 inch long... ... ... 1. *Thesium*
Leaves minute scales, or none.
  Ovary inferior. Fruit-stalk thin ... ... 2. *Leptomeria.*
  Ovary superior. Fruit-stalk thick, fleshy ... ... 3. *Exocarpus.*

1. THESIUM.

Perianth-tube combined with ovary at the base, free above. Ovary inferior. Fruit dry, crowned by the dried perianth.

The genus is widely dispersed in both Hemispheres, but only one species occurs in Australian distribution.

T. AUSTRALE, *R. Br.* A small under-shrub or perennial herb, rarely exceeding 1 foot. Leaves ½-1 inch long, mostly linear, alternate. Flowers solitary, stalked, axillary, the stalk partially combined with the subtending leaf. The free portion of the perianth tubular, under 1 line long. Lobes 5, short. Stigma on a conspicuous style. Fruit about 1½ line long, ribbed.

Reported from the upper portion of the Derwent. It occurs throughout Eastern Australia, and is probably identical with an East Indian form. Fl. Nov.-Jan.

2. LEPTOMERIA.

Perianth-tube combined with the ovary nearly to the lobes. Ovary inferior. Stigma nearly sessile. Fruit with a dry or slightly succulent pericarp.

A purely Australian genus.

Plant tall. Flowers in small loose spikes or racemes ... 1. *L. billardieri.*
Plant few inches high, rigid. Flowers in short clusters 2. *L. glomerata.*

1. L. BILLARDIERI, *R. Br.* An erect much-branched shrub, mostly 4 or 5 feet high, the branches often very slender, but sometimes coarse and rigid. Leaves reduced to minute scales that fall while the shoots are very immature. Flowers in small lateral, linear, spikes, or spike-like racemes, ¼-¾ inch long. Each flower subtended by a very deciduous bract, the ovary tapering below into the very short stalk. Perianth-lobes white or pink, ovate, obtuse, thickened at the apex, not ½ line long. The throat of the perianth closed by a 5-lobed disk. Fruit crowned by the persistent perianth, about 3 lines long, the pericarp thick and slightly fleshy.

Near Waterworks, Hobart, Bellerive, George's Bay, and in many situations in the north. It occurs also in New South Wales and Queensland. Fl. Sept.-Dec.

2. L. GLOMERATA, *F. v. M.* A small, erect, rigid under-shrub, from 3 inches to nearly 1 foot high, the branches coarse and indefinitely angled. Leaves minute, scale-like, falling very early. Flowers in short few-flowered spikes, or spike-like racemes, or 2 or 3 in a cluster, the inflorescence and flowers not otherwise differing from *L. billardieri.* Fruit about 2 lines long, crowned by the persistent perianth, of similar consistency to the last.

On the coast, on the south and west. Widely dispersed, but not common. Fl. Jan.

3. EXOCARPUS.

Perianth entirely below the ovary, the tube obsolete, the lobes being free nearly from the base. Stamens inserted near the base of the lobes. Ovary free, conical, but in some flowers abortive and flat. Stigma small, sessile. Fruit dry or nearly so, usually surrounded at the base by the persistent perianth, the fruit-stalk enlarged into a thick, succulent, coloured support in most species.

The genus is not large, but is widely spread in the Southern Hemisphere.

Flowers in small linear spikes. Fruit-stalk red ... 1. *E. cupressiformis.*
Flowers in small sessile clusters.
  Plant erect. Fruit with a red or white base. Leaf-scales very deciduous .. .. 2. *E. stricta.*
  Plant procumbent. Fruit with a white base. Leaf-scales persistent, alternate ... ... 3. *E. humifusa.*
  Plant prostrate. Leaf-scales opposite or nearly so. 4. *E. nana.*

1. E. CUPRESSIFORMIS, *Lab.* A small tree, the branches very numerous, slender, and usually drooping towards their ends. Leaves reduced to minute, alternate, persistent scales. Flowers in small, lateral, and terminal spikes, about ¼ inch long. Perianth minute. Fruit ovoid, about 2½ lines long. The rhachis of the

spike on which fruit forms much elongating, and a stalk of 2-3 lines long forms at the base of the fruit, and becomes thick, fleshy, and red.

Common in most parts. It occurs almost throughout Australia. Fl. Sept.-Nov.

2. E. STRICTA, *R. Br.* In the typical form erect, much-branched, 4-10 feet, the branches slender and striate. In some Tasmanian forms the branchlets are coarse and grooved, while in others they are slender and drooping. Leaves minute, acute, soon falling, or in some slender forms persistent. Flowers few together, in small, lateral, sessile clusters, minute. Fruit similar to the last, only the fleshy pedicel usually white, though in some forms also red.

Very common; also South Australia, Victoria, and New South Wales. Fl. spring.

3. E. HUMIFUSA. *R. Br.* A small, prostrate, spreading shrub, the branchlets coarse and grooved, but not compressed. Leaves minute, scale-like, alternate, persistent. Flowers and fruit not essentially differing from the last.

Mounts Wellington, La Perouse, Dundas, and probably most other mountain-tops. Fl. Nov.-Dec.

4. E. NANA, *H.* Small, prostrate, with numerous slender, compressed, and grooved branchlets. Leaves minute, opposite, persistent. Flowers and fruit as in *E. stricta.*

St. Patrick River, Thomas Plains, Great Lake; also in Victoria. Fl. Nov.-Dec.

MONOCOTYLEDONS.

ORDER LXXIV.—*HYDROCHARIDEÆ.*

Flowers unisexual. Perianth of 3 or 6 obscure or petaloid segments Stamens usually few. Ovary inferior, 1-celled, with 3 parietal placentas or partially divided into 3 cells. Ovules numerous. Fruit capsular.

The order contains diverse forms of water plants, and is distributed almost throughout the world.

Leaves radical, long	1. *Vallisneria.*
Leaves opposite or whorled	2. *Elodea.*

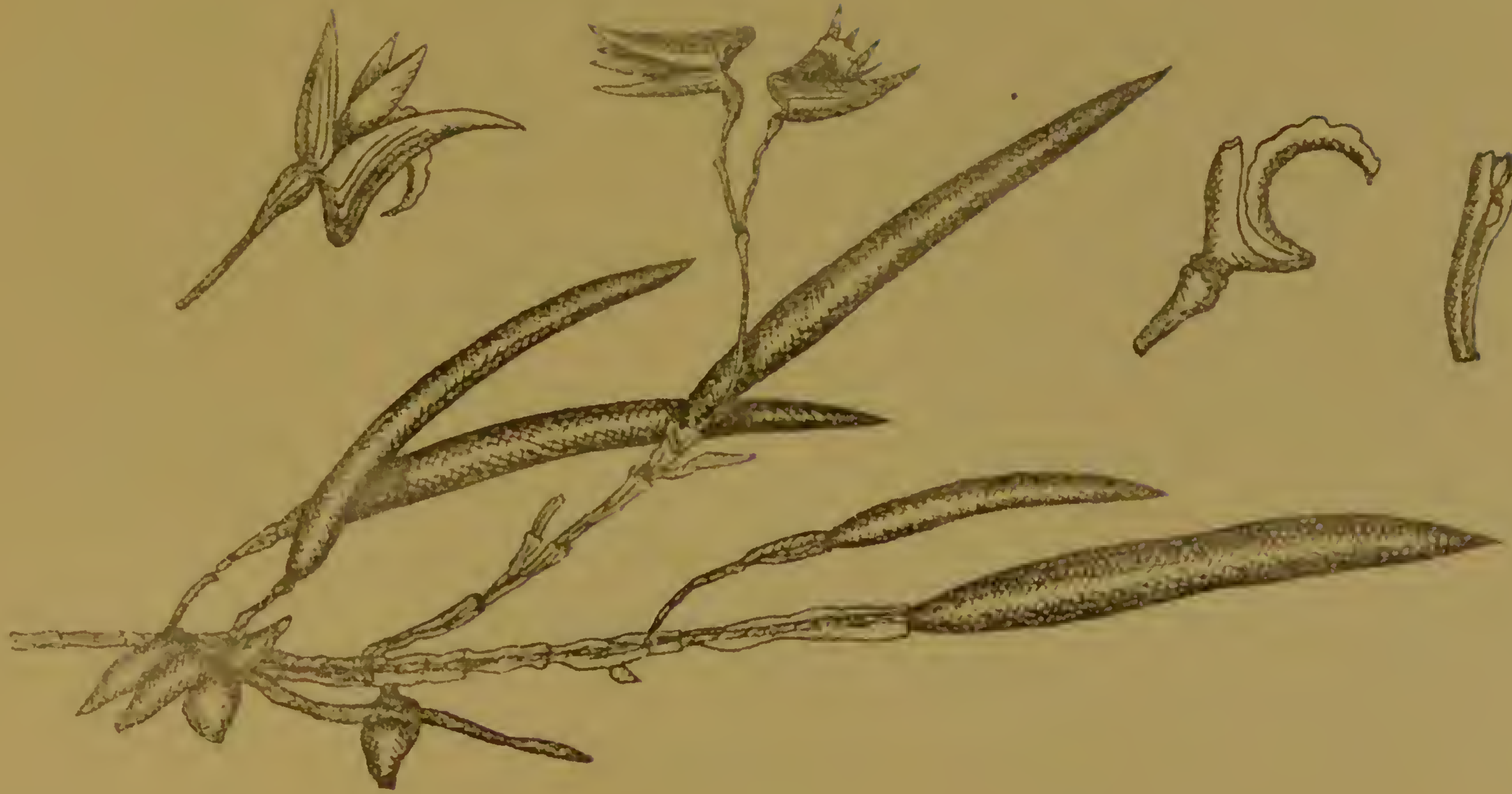
1. VALLISNERIA.

Staminate flowers numerous, minute, in a large enveloping bract at the base of the leaves, deciduous before opening. Perianth of 3 segments. Stamens 1-3, in a central column. Pistillate flowers solitary, on a long coiled peduncle. Perianth 6, the 3 inner ones small and narrow. Stigma 3-fid.

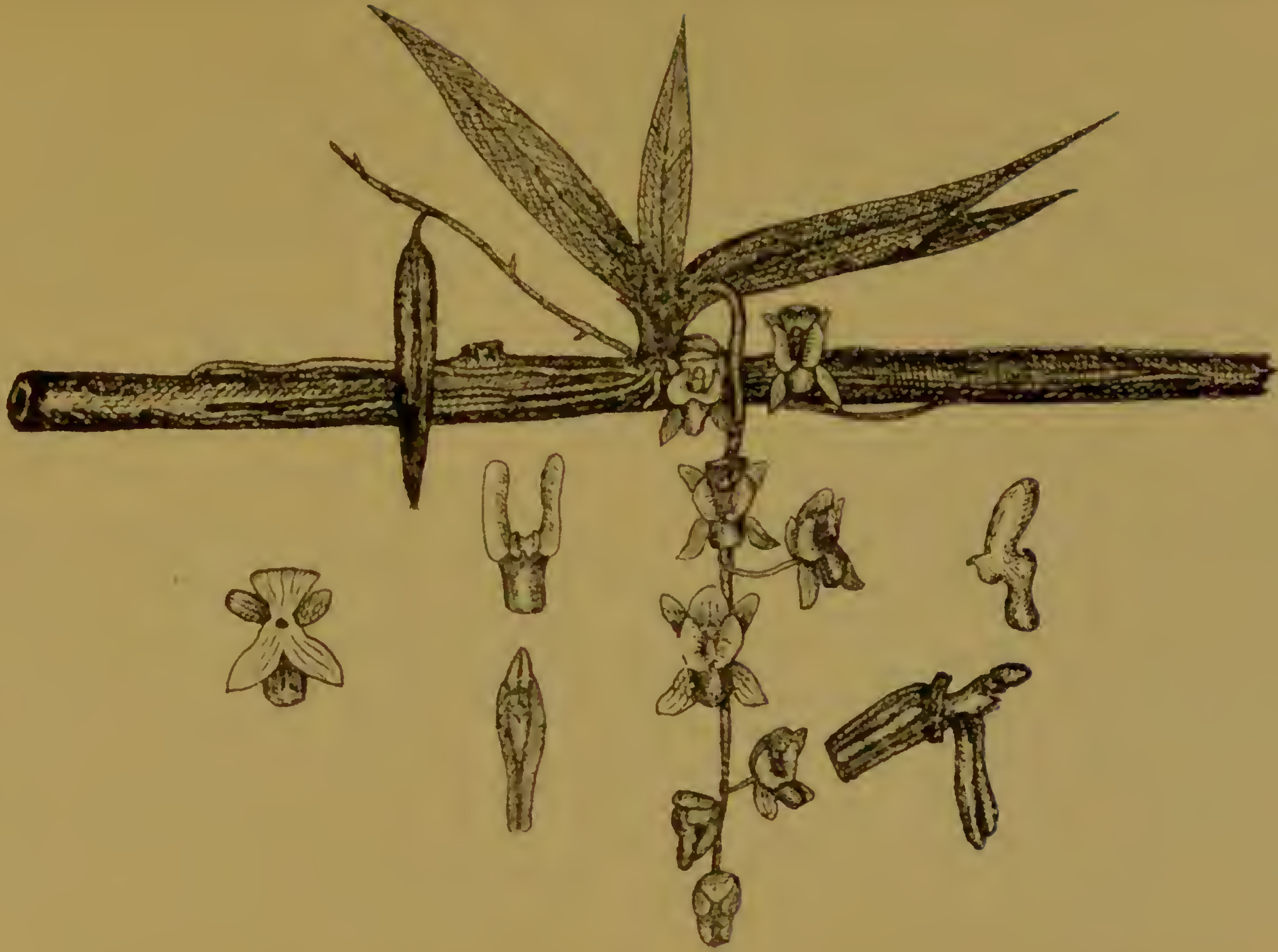
V. SPIRALIS, *Linn.* Submerged and stoloniferous. Leaves sword-shaped, 1-3 feet long, $\frac{1}{2}$-1 inch wide. Pistillate flowers about 1 inch long, on a coiled peduncle long enough to reach the surface. In Tasmanian plants the peduncle is seldom much recoiled after fertilisation.

Jordan River, South Esk; also throughout Australia. Widely distributed in the Northern Hemisphere. Fl. Jan.

The Tasmanian form described above is much more robust than the type.



DENDROBIUM STRIATUM



SARCOCHILUS PARVIFLORUS. *Lind.*

2. ELODEA.

Staminate flowers minute, sessile in the leaf axils. Pistillate flowers solitary, axillary, on a slender stalk, continuous above into the filiform ovary.

A small American genus.

E. CANADENSIS, *Rich.* Submerged, spreading, and much-branched. Leaves oblong, about ¼ inch long, numerous, spreading, opposite or whorled. Perianth of female flower about 1½ line diameter, on a slender stalk 1-3 inches long. *Anacharis alsinastrum*, L.

Common about Hobart, Jordan, &c. Introduced, and apparently only the female plant. Fl. Dec.-Mar.

ORDER LXXV. *ORCHIDACEÆ.*

Perianth superior, usually irregular. Segments 6, in 2 series. Of the outer three, or sepals, the one in the median plane is termed the dorsal sepal, the other two are the lateral sepals. Of the inner series, petals, one is usually much modified in shape, and is called the labellum. Stamens combined with the style in a column, the stigma developing close below the anthers. Between the two organs is developed a process, the rostellum. Pollen in masses, attached to a sucker-like deciduous club, derived from the rostellum. Ovary 1-celled, with 3 parietal placentas. Ovules numerous.

A large order, of world-wide distribution

- Leaves on the scape more than one.
  - Leaves very distinct from bracts.
    - Leaves cylindrical, nearly woody ... .. 1. *Dendrobium.*
    - Leaves flat.
      - Flowers white, spotted with pink, in a drooping panicle ... . 2. *Sarcochilus.*
      - Flowers green or purple-brown.
        - Flowers green, hood-shaped 14. *Pterostylis.*
        - Flowers green or purple-brown. The labellum with conspicuous glands ... 22 *Chiloglottis.*
        - Flowers purple brown The labellum long and broad .. .. 10. *Cryptostylis*
  - Leaves passing gradually into bracts.
    - Flowers numerous, small, pink, in a spiral round the stem ... . 5. *Spiranthes.*
    - Flowers with a long labellum covered with long purple and brown hairs ... .. 6. *Calochilus.*
    - Flowers green, hood-shaped .. 14. *Pterostylis.*
    - Flowers slate-coloured, merging into green, yellow, or purple-brown. The upper segment nearly hood-shaped, the 2 lowest very long and linear ... ... 9 *Orthoceras.*
    - Flowers nearly regular, blue, pink, white, or yellow ... ... 7 *Thelymitra.*
    - Flowers very irregular, yellow, often blotched with purple-brown ... ... 8. *Diuris.*
- Leaves on the scape solitary, flat, broad.
  - Leaves heart-shaped or nearly so.
    - Flower solitary, broadly hood-shaped, close to to the leaf ... ... 13. *Corysanthes.*

lines long. the wing formed round the column above, but short and hardly lobed. Anthers thick. pubescent. and protruding. *T. smithiana*, H.

Bellerive. Bruni Island, Southport, George's Bay, and many places in north and north-west; Bass Straits; also South Australia. Fl. Nov.-Dec.

8. DIURIS.

Perianth very irregular. Of the outer whorl the upper segment is broad, and over-arches the column; the lower segments are long and narrow. The 2 upper segments of the inner whorl spreading, with a broad lamina. Labellum deeply 3-lobed. Column very short, with a falcate, free, lateral lobe on each side. Anther erect. Rostellum about as long as the anther.

A purely Australian genus.

Perianth-segments all directed forwards, pale yellow. Labellum long, acute	3. ***D. pedunculata.***
Upper pair of segments reflexed, marked with brown or pink-purple.	
Uppermost segment nearly as long as the lower linear pair	4. ***D. sulphurea.***
Uppermost segment short and broad.	
Perianth marked with pink-brown; lateral lobes of labellum broadly obovate	5. ***D. longifolia.***
Perianth blotched with purple-brown; lateral lobes of labellum broadly lanceolate.	
Lowest pair of segments about as long as the upper pair	2. ***D. maculata.***
Lowest pair much longer	1. ***D. palustris.***

1. **D. PALUSTRIS**, *Lindl.* Seldom above 6 inches high. Leaves few, linear, sheathing, passing above into the bracts. Flowers usually 3 or 4, yellow and purple-brown. The upper over-arching segment short and broad, the upper pair reflexed; the linear lower pair much exceeding the upper ones, $\frac{1}{2}$-$\frac{3}{4}$ inch long. Labellum short, the middle lobe emarginate, lateral lobes broadly lanceolate, falcate.

Hobart, Bellerive, Huon, Southport, East Coast, Macquarie Harbour, Circular Head, &c. Probably common in damp localities, but overlooked from its affinity to ***D. maculata***; also in Victoria and South Australia. Fl. Oct.

2. D. MACULATA, *Sm.* Stem tall and slender. usually 1-2 feet. Leaves sheathing, very slender. linear, about 4-6 inches long, usually about 2 or 3, and 1 or 2 reduced to bracts above them. Flowers usually 2-6, in a more or less flexuose raceme, yellow. blotched with purple. but to a variable extent. The upper over-arching segment short and very broad, the reflexed pair $\frac{1}{2}$-$\frac{3}{4}$ inch long, the linear lower pair often, but not always, crossed. about the same length. Labellum short and truncate in the type. but variable, sometimes nearly $\frac{1}{2}$ inch long, and barely emarginate; lateral lobes as long as the middle lobe, and broadly lanceolate in the type, comparatively shorter, narrower, falcate, and dentate on the outer margin when the labellum is elongated.

Very common. It occurs also throughout Eastern and Southern Australia. Fl. Sept.

3. D. PEDUNCULATA, *R. Br.* Stem about 6-9 inches high. Leaves sheathing, very narrow-linear, about 4 inches long, usually 2, and 2 or 3 reduced to scales above them. Flowers 1-3, sulphur-yellow or orange, not spotted, the segments all pointing forwards. The over-arching lobe very short, the linear lower pair nearly 1 inch long. Labellum nearly as long as the linear lobes, ovate, acute; the lateral lobes small, narrow, acute.

Very common, principally in grassy situations; also throughout Eastern and Southern Australia. Fl. Oct.

4. D. SULPHUREA, *R. Br.* Tall and robust, stems often 2 feet high. Leaves long, narrow, linear, sheathing, usually 1 or 2, and 1 or 2 reduced to bracts above them. Flowers larger than in previous forms, sulphur-yellow with few spots of dark purple. Over-arching segment about ¾ inch long, ovate, acute, usually with 1 large round spot on each side. Reflexed segments about 1 inch long, the linear lower pair about the same length. Labellum rather shorter than the upper segment, the central lobe rhomboid, lateral lobes short, obovoid.

Very common, chiefly in heathy land. It occurs in New South Wales, Victoria, and South Australia. Fl. Oct.-Nov.

5. D. LONGIFOLIA, *R. Br.* A plant about as tall and robust as the last. Leaves long, sheathing, narrow-linear, but broader than in *D. sulphurea*, usually 2 or 3, the upper one partially bract-like. Flowers usually 3 or 4, yellow, marked with a paler colour than the allies, and hardly spotted. Over-arching segment short and very broad; linear lower ones about 1 inch long, usually crossing. Labellum about ½ inch long, the middle lobe very truncated, lateral lobes broadly obovate and nearly as long as the middle one. *D. corymbosa*, Hook.

Common in the north and north-east; also in Victoria, South Australia, and West Australia. Fl. Oct.

9. ORTHOCERAS.

Segments of the outer series: upper one erect, convex over the column, lower pair narrow-linear, very long; inner series: upper pair small and hidden. Labellum 3-lobed, the central one exceeding the others, a hemispherical eminence developed near the base. Column very short; the lateral lobes linear, free. Anther erect, valvular.

The genus contains but one species, and is confined to Australian and New Zealand distribution.

O. STRICTUM, *R. Br.* Stem tall, 1-2 feet high. Leaves usually 3 or 4, sheathing, linear, passing above into the bracts. Flowers usually many, in a loose spike, each flower erect and subtended by a large bract, usually slate-coloured in Tasmanian specimens, or greenish, but varying to brown-purple or yellow. Upper segment and labellum about ⅓ inch long; the lower linear segments very slender, erect, 1-1½ inch long.

Near George's Bay, near Trial Harbour, West Coast. It occurs also in New South Wales, Victoria, and South Australia; also in New Zealand. Fl. Jan.

10. CRYPTOSTYLIS.

Flowers inverted. Perianth-segments all narrow-linear. Labellum exceeding the other segments, oblong, broad, sheathing the column at the base. Column very short, with short, broad, connate, irregular, lateral lobes. Anther valvular, rather shorter than the rostellum.

A small genus, confined to the East Indies and Australia.

C. LONGIFOLIA, *R. Br.* Stem slender, erect, mostly about 1 foot high, arising from a thickened rootstock. Leaves 1-3, inserted at the head of the rootstock, ovate-lanceolate, 2-4 inches long, contracted below into a stalk about half as long as the lamina. Flowers few, in a terminal raceme, purple-brown, the linear perianth-segments about ¾ inch long. Labellum about 1 inch long, oblong, the margin and apex recurved, with 2 thickened longitudinal lines in the centre, and a thickened crest near the end.

Bellerive, Bruni Island, Oyster Cove, Huon, Southport, Circular Head, and many other localities in the north. Principally in damp heathy country; also throughout Eastern Australia. Fl. Dec.

11. PRASOPHYLLUM

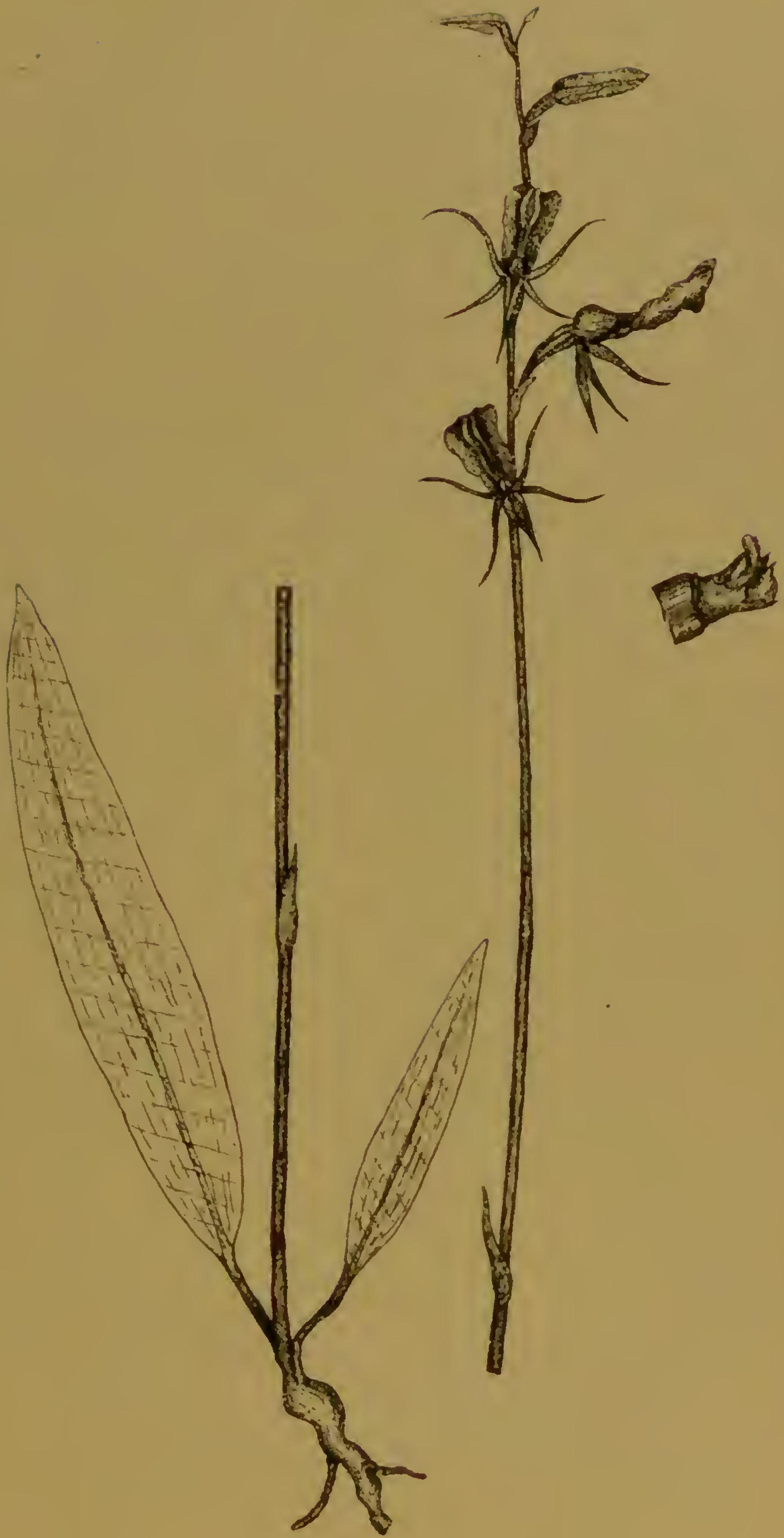
Flowers inverted. Outer series of perianth-segments herbaceous, the lower one ovate, concave below the column, the upper pair narrower, erect, often partially united or adhering to one another; inner pair of segments rather smaller, herbaceous or petaloid. Labellum oblong or ovate, entire, usually curved, sessile or on a short slender stalk, bearing a thickened plate in the centre. Column very short, with free lateral lobes. Anther valvate. Rostellum about as long as the anther. Flowers always in terminal spikes.

The genus is confined to Australia and New Zealand, but is principally developed in Tasmania and extra-tropical Australia.

> Bentham, in "Fl. Aust.," takes exception to the lateral sepals having been described as 2-dentate in two or three species, considering the description erroneous. In the Tasmanian forms of *P. fuscum* the 2-dentate termination of the lateral sepals is very marked, and is usually so in *P. brevilabre*, and rarely also in *P. patens*.

Plant usually robust, with a conspicuous leaf, and flowers exceeding 2 lines. Labellum sessile.
Upper perianth-segments more or less united.
Ovary linear-oblong.
Labellum swollen towards the base, upper half recurved, wavy ... ... 1. *P. australe.*
Labellum hardly swollen at base, upper half curved back ... ... 2. *P. flavum.*
Labellum nearly flat, erect, the central plate covering most of it ... ... 3. *P. elatum.*
Ovary ovate. Labellum bent close back from the middle ... ... 4. *P. brevilabre.*
Upper perianth-segments quite free from one another.
Side-segments of perianth petaloid; central plate of labellum not conspicuous beyond the middle ... ... 5. *P. patens.*
Side-segments herbaceous; central plate of labellum swollen, and extending nearly to the end ... ... 6. *P. fuscum.*
Plant small, slender. Leaf reduced to a bract, and flowers very small. Labellum irritable, on a short slender stalk.
Labellum with a fringed margin.
Upper segments nearly 3 lines long, swollen towards the base... ... ... 7. *P. archeri.*
Upper segments 2 lines long, narrow, acute ... 8. *P. intricatum.*
Labellum hairless on the margin.
Plant very dark red.
Perianth about 2 lines long; the segments lanceolate-acute, exceeding the ovary ... 9. *P. despectans.*
Perianth about 2 lines long; the segments broad, swollen... .. .. 10. *P. nigricans.*
Perianth hardly 1 line long, much shorter than ovary ... ... 11. *P. rufum.*
Plant pale. Perianth-segments lanceolate, about 2 lines long ... ... 12. *P. brachystachyum.*

1. P. AUSTRALE. *R. Br.* A stout plant, 1-3 feet high. Leaf with a long sheath and a short lamina. Flowers very numerous. Outer perianth-segments about 4 lines long, the upper pair united below but free at the points. Labellum sessile, very inflated towards the base, sharply recurved at about the middle, the



[illegible] CRYPTOSTYLIS LONGIFOLIA. *R. Br.*

margin wavy, the inner plate prominent but dying away below the bend. Lateral lobes of column longer than the anther, lanceolate, falcate. *P. lutescens*, Hook.

Bellerive, Cascades Estate, Bruni Island, Southport, Rocky Cape, &c.; Bass Straits; also in Victoria, South Australia, New South Wales, and Queensland. Fl. Dec.-Feb.

2. P. FLAVUM, *R. Br.* A plant of similar general appearance to the last, only generally more robust. Leaf with a long sheath, and a lamina seldom more than an inch long. Flowers numerous, pale, upper segments united except at the tips, about 4 lines long. Labellum somewhat inflated in the lower half, the upper half curved back, but not bent at an angle, as in *P. australe*; the upper half narrow, with a slightly wavy margin; central plate prominent, and extending throughout ⅔ of the labellum. Lateral lobes of the column shorter than the anther, broad, 2-dentate.

Bruni Island, Oyster Cove, Huon, Southport, near Strahan, &c.; also in New South Wales and Queensland. Fl. Oct.-Dec.

3. P. ELATUM, *R. Br.* A tall robust plant, of similar habit and general appearance as *P. australe*, but often 3 feet or more high. Leaf with a long sheath and often a fairly long lamina. Flowers very numerous, rather large, pale greenish-yellow. Outer segments about ½ inch long, the upper pair more or less united, often free towards their base, the tips usually free. Labellum but slightly curved, principally near the end, margin slightly wavy, central plate very prominent and covering the greater portion of the labellum. Lateral lobes of the column much exceeding the anther, linear, falcate, with a prominent gland towards the base of the anterior margin. *P. australe*, Hook.

Circular Head, Rocky Cape, George's Bay; also throughout extra-tropical Australia. Fl. Oct.-Dec.

4. P. BREVILABRE, *Hook.* A rather robust plant, usually 6 inches to 1 foot high. Leaf with a very loose sheath, and a lamina about 2 or 3 inches long. Ovary short, oblong. Flowers few or many, dark-brown, red, and white. Outer segments about 4 lines long; the upper pair more or less united, rarely nearly free. Labellum closely reflexed on itself from about the middle, rather broad, with wavy margins; central plate prominent, narrow, terminating just beyond the turn. Lateral lobes of the column about as long as the anther, linear, falcate, with a prominent gland towards the base on the anterior margin.

Cascades (Hobart), Bruni Island, Southport, George's Bay, Rocky Cape, &c.; also in Queensland, New South Wales, and Victoria. Fl. Oct.-Nov.

5. P. PATENS, *R. Br.* A slender plant, usually 9-18 inches high. Leaf with a long slender sheath and a rather long, very slender, lamina. Flowers fairly numerous, pale-green and white with pink marks. Ovary small, oblong. Outer perianth-segments slender, about 3 lines long; the upper pair completely free and diverging; side pair more petaloid than in other species, white with a central red line. Labellum from regularly recurved to as sharply reflexed as in *P. brevilabre*, very narrow at the insertion, broad and wavy above; central plate narrow, not very prominent, not generally extending more than half way, but variable. Lateral lobe of column about as long as the anther, broadly linear, obtuse or obscurely 2-dentate, curved but not falcate, the gland on the anterior margin prominent in some specimens, in others hardly apparent, even in fresh plants. *P. patens* and *P. truncatum*, Hook.

Common in most localities, and at all altitudes. It also occurs in Queensland, New South Wales, Victoria, and South Australia. Fl. Oct.-Feb.

6. P. FUSCUM, *R. Br.* A plant of similar size, habit, and leaf to the last. Outer perianth-segments slender; the upper pair free and parallel, sometimes

cohering at the base, usually 2-dentate, all brown-green; side pair narrow, similar to the outer segments. Labellum recurved, chiefly towards the apex, broad below (except at the base), narrow above, acute; central plate prominent. swollen, extending nearly to the end. Lateral lobe of the column rather shorter than the anther, broad, rounded or obscurely 2-lobed above, and with a large, but not prominent, gland towards the base of the anterior margin. *P. fuscum* and *P. alpinum*, Hook.

Mount Wellington summit, Cascades (Hobart), Kingston, near Strahan, George's Bay, Rocky Cape, &c.; also in Queensland, New South Wales, Victoria, and South Australia. Fl. Oct.-Feb.

7. P. ARCHERI, *Hook.* Stem slender, 6-9 inches high. Leaf reduced to a bract close under the inflorescence. Flowers few, in a rather loose terminal spike. Outer segments dark red-brown, about ¼ inch long, the one below the column (together with the side pair) ciliate on the margin, the pair about the labellum linear, acute, but dilated towards the base. Labellum narrow-oblong, fringed with long hairs, supported on a short slender stalk, irritable. Lateral lobe of the column rather long, bifid.

Cheshunt, Southport, Oyster Cove, &c.; also in Victoria. Fl. Nov.-Dec.

8. P. INTRICATUM, *C. Stuart.* A plant of similar habit and structure to the last. Flowers pale. Outer segments about 2 lines long, the upper pair linear, acute, broad near the base, but not dilated. Labellum broadly obovate, fringed with shorter hairs than in the last, but similarly supported.

Southport; also Victoria Fl. Dec.-Jan.

9. P. DESPECTANS, *Hook.* Stem about 6-9 inches high, with a bract-like leaf about an inch below the inflorescence. Flowers dark brown-red, many in a rather dense terminal spike. Upper pair of segments tipped with glands, linear, acute, about 2 lines long; the lowest segment short, broad, and very concave, acute; side pair very short, broad, acute. Labellum narrow-oblong, acute, about 1 line long, concave-convex, supported on a short slender stalk, irritable. Lateral lobes of the column with a broad base and an acute apex adnate to the whole length of the column.

Near Waterworks (Hobart), Kingston, Longley, Southport, Oyster Cove, Bruni Island, George's Bay, &c.; also South Australia and Victoria. Fl. Feb.

10. P. NIGRICANS, *R. Br.* Similar to the last, only rather smaller. Flowers very dark and small, in a small, dense, terminal spike. Upper pair of segments tipped with glands, about 2 lines long, broadly lanceolate, acute; the lowest segment much shorter, broad, and concave; side pair of segments rather longer than the upper pair, broad, acute. Labellum ovate, acute, about 1 line long, supported on a slender stalk, irritable. Lateral lobes of the column comparatively very large, adnate throughout the entire length of the column, tapering into a bifid apex.

Oyster Cove, Southport, George's Bay, Waterworks (Hobart). It has also been found in New South Wales, South Australia, Victoria, and Queensland. Fl. Mar.

11. P. RUFUM, *R. Br.* Size and habit similar to *P. despectans.* Flowers dark red-brown, very small, about 1 line long. Upper pair of segments lanceolate, probably, like *P. despectans* and *P. nigricans*, tipped with glands, but hardly discernible, except when young and fresh; lowest segment ovate, concave, acute. Labellum narrow-lanceolate, recurved, on a slender stalk, irritable. Lateral lobes of the column very short, bifid. *P. nudum*, Hook.

Cheshunt, Waterworks (Hobart), &c.; also in Queensland, New South Wales, and Victoria; also in New Zealand. Fl. Jan.

12. P. BRACHYSTACHYUM, *Lindl.* Similar in size and habit to preceding species. Flowers numerous, in a short, dense, terminal spike, pale green tinged with

yellow-brown. Upper pair of segments about 2 lines long, ovate-lanceolate, acute; lowest segment shorter and broader. Labellum oblong, sub-acute, on a slender stalk, irritable. Lateral lobes of the column rather longer than the column, and adnate to it throughout its length, acute, with a second point below the apex.

Waterworks (Hobart), Kingston, Circular Head, Rocky Cape, &c. Fl. May.

12. MICROTIS.

Flowers small, green, in a terminal spike. Outer perianth-segments: the upper one erect, broad; lower pair narrow, very short, usually recurved. Labellum short, sessile, obtuse or bifid, variously thickened on the upper surface. Column very short. Anther valvular.

A small genus, principally Australian, but extending from Eastern Asia to New Zealand.

M. PORRIFOLIA, *Spreng.* Stem from 4 inches to 1 foot high. Leaf linear, with a long sheath and lamina a few inches long. Flowers numerous, green, variable in size, but seldom exceeding 1 line, on an obovate ovary about twice as long. Labellum about 1 line long, oblong, emarginate or 2-lobed, margins usually crenate, the centre bearing 2 protuberances towards the base, and 1 near the apex. Column minutely winged. *M. pulchella*, *arenaria*, and *rara*, Hook. included.

Very common; also in Queensland, New South Wales, Victoria, South Australia, and West Australia. Fl. Nov.-Mar.

Among the many forms the following is usually considered specifically distinct:—

> Var. *parviflora*, R. Br. More slender, and with rather smaller flowers than in the type. Labellum with less prominent protuberances, and column-wing more conspicuous. *M. parviflora*, Benth. "Fl. Aust." and Hook. "Fl. Tas." Circular Head. The Australian distribution is the same as the type. It extends to New Caledonia and Eastern Asia.

13. CORYSANTHES.

Upper segment of the perianth erect and hood-shaped; other segments usually small, linear, and inconspicuous. Labellum erect, broad, large, recurved on itself. Column short, erect, obscurely winged. Anther erect, valvular. Flower solitary, red-brown. Leaf single.

The genus is small, and spreads from the East Indies to New Zealand.

Dorsal sepal as large as the labellum.
  Flower bent, orifice with a downward aspect … 1. *C. unguiculata.*
  Flower erect, looking forwards … … 2. *C. pruinosa.*
Dorsal sepal smaller than the labellum, greenish … 3. *C. diemenica.*
Dorsal sepal much exceeding and including the labellum … … … … 4. *C. bicalcarata.*

1. C. UNGUICULATA, *R. Br.* Leaf cordate, acute, $\frac{1}{2}$-$\frac{3}{4}$ inch, pale beneath slightly tinted with red. Stalk and ovary erect, about $\frac{1}{4}$ inch. The perianth erect at the base, then sharply curved downwards. Dorsal sepal contracted below, orbicular and concave at the apex. Labellum exceeding the dorsal sepal, concave, not expanded, leaving a narrow entrance to the flower.

Blackman Bay, River Derwent; also New South Wales and Victoria. Fl. July.

2. C. PRUINOSA, *Cunn.* Leaf broadly cordate, acute, $\frac{1}{4}$-1 inch, pale, frosty beneath. Stalk and ovary erect, about $\frac{1}{4}$ inch. Perianth erect, opening directed forwards. Dorsal sepal curved forwards, nearly 1 inch long, with a broad hood-shaped apex. Labellum narrow, tubular below, erect and embracing the column,

then sharply recurved on itself, very broad, with a pulvinate centre and a spreading coarsely denticulate margin.

Very common in damp situations; also throughout extra-tropical Australia. Doubtfully distinct from *C. fimbriata*, R. Br. Fl. all the year.

3. C. DIEMENICA. *Lind.* Very similar to the last, but smaller. Flower about $\frac{1}{2}$ inch, the dorsal segment rather narrow, green, spotted with dark red. Labellum exceeding the dorsal sepal, not as closely recurved as in *C. pruinosa*, the pulvinate centre yellow and pubescent, the margin incurved and minutely denticulate.

Very common in numerous situations; also Southern Australia. Fl. Jun.-Dec.

4. C. BICALCARATA, *R. Br.* Leaf membranous, dark red below, about 1 inch diameter. Flower-stalk about 1 inch long, bearing a small linear bract near the base, the stalk, bract, and flower very dark red. Dorsal segment over-arching, very convex, acute, the apex usually, but not always, upturned, about $\frac{3}{4}$ inch long. Labellum very much smaller, the tubular base rather long, and extended below into 2 horn-like auricles that appear conspicuous in front of the stem, expanded portion narrow, about 3 lines diameter, with a plain recurved margin. Column narrowly but distinctly winged, and bearing a thick cushion at its anterior base.

Near George's Bay. It also occurs in New South Wales and Queensland. Fl. May.

14. PTEROSTYLIS.

Three upper perianth-segments adhering, and forming an over-arching hood; two lower segments connate at the base, erect or recurved. Labellum ovate to linear, thickened, or filiform and clothed with hairs, bearing a basal, linear, usually penicillate, process, articulated on a slender, flat, irritable stalk. Column erect, rather slender, bearing a pair of somewhat hatchet-shaped wings near the apex. Anther valvular.

The genus is principally Australian, but extends to New Caledonia and New Zealand.

Lower perianth-lobes erect, the tips embracing the upper ones.
Leaves in a rosette round the base of the stem
Tips of lower lobes long and slender.
Labellum bifid ... ... 1. *P. concinna.*
Labellum oblong. Stem pubescent ... ... 5. *P. nana.*
Labellum ovate. Stem glabrous ... ... 4. *P. pedunculata.*
Tips of lower lobes shorter than the upper ones.
Flower erect ... ... 2. *P. curta.*
Flower nodding ... ... 3. *P. nutans.*
Leaves dispersed on the stem or none.
Leaves or bracts large.
Bracts large, spathe-like ... ... 6. *P. cucullata.*
Bracts leafy, the lowest largest .. ... 7. *P. furcata.*
Bracts small. Leaves on separate stems or none.
Flowers solitary Tips of lobes long and slender.
Labellum tapering to an acute point ... 8. *P. præcox.*
Labellum oblong-linear, nearly obtuse ... 9. *P. obtusa.*
Flowers usually 2 or more together. Lobes rather obtuse.
Labellum oblong ... ... 10. *P. parviflora.*
Labellum ellipsoid ... ... 11. *P. aphylla.*

Lower perianth division bent downwards.
  Leaves principally at base of stem.
    Flower solitary. Labellum long, filiform. covered with yellow hairs ... ... 12. *P. barbata.*
    Flowers few or many. Labellum ovoid.
      Perianth-segments obtuse. Flowers many ... 13. *P. mutica.*
      Perianth-segments acute. Flowers 2-4 ... 14. *P. rufa.*
  Leaves on separate stems. Flowering-stems bearing leaf-like bracts.
    Leaf-like bracts narrow, linear, with a narrow clasping base ... ... 15. *P. longifolia.*
    Bracts broader, with a broad sheathing base ... 16. *P. vittata.*

1. P. CONCINNA, *R. Br.* Leaves usually 4, in a basal rosette, oblong, stalked, about $\frac{1}{2}$-$\frac{3}{4}$ inch long. Flower-stem about 6 inches long, slender, minutely pubescent or papillose, bearing 2 small bracts. Flower solitary, about $\frac{3}{4}$ inch long, erect, the uppermost segment elongated into a short point, the lowest segments erect with long filiform points embracing the hood. Labellum rather shorter than the column, the sides parallel and ending in 2 acute widely-separated points; the basal process filiform, curved, penicillate. Column erect, the wings extended above into long awl-shaped processes, much exceeding the anther, and below into a broad, obtuse, ciliated lamina.

In heathy, hilly country near Bellerive, Richmond, &c.; also South Australia, Victoria, New South Wales, and Queensland. Fl. June.

> When this plant lives with *P. præcox* hybridisation is common, and all intermediate forms may be found.

2. P. CURTA, *R. Br.* Leaves 3 or 4, in a basal rosette, oblong, stalked, about 1-1½ inch long, many-nerved. Flower-stem about 9 inches high, with 2 or 3 bracts. Flower erect, about 1 inch long, the upper hood-shaped division bent forward, nearly obtuse; lower division shorter than the upper one, embracing the hood, but not exceeding it. Labellum narrow-oblong, acute in Tasmanian forms, about as long as the column; basal appendage filiform, curved, and penicillate. Column erect, the wing with a subulate point above and a flat obtuse lobe below.

Common in many parts, but principally in the north. It also occurs in New South Wales, Victoria, South Australia, and Queensland. Fl. Sept.

3. P. NUTANS, *R. Br.* Of similar general habit to the last. Leaves 3 or 4, in a basal rosette, the outer ones stalked, the inner sheathing, many-nerved, wavy, 1-2 inches long. Stalk about 9 inches long, with 2 or 3 bracts. Flower somewhat nodding, about 1 inch long, very curved, the points of the upper division directed downwards; lower division sub-erect, embracing and extending somewhat beyond the upper one. Labellum narrow-ovate, rather long, very curved, obtuse, the upper surface minutely pubescent. Column curved, the wing with a subulate upper process and an obtuse ciliate lower lobe.

Very common. It occurs also in Queensland, New South Wales, Victoria, and South Australia. Fl. Oct.

4. P. PEDUNCULATA, *R. Br.* Leaves 2-4, in a basal rosette, stalked, many-nerved, $\frac{3}{4}$-1½ inch long, margin wavy. Stalk 4-6 inches long, with 2 or 3 bracts. Flower erect, about ¾ inch long, the upper division erect for rather more than half its length, then bent straight forward with a short acute point; lower division erect, with very long slender points, embracing and much exceeding the hood. Labellum ovate, much shorter than the column. Column erect, the wings with a filiform upper process and a flat ciliate lower lobe.

Very common in shady places; also in New South Wales, Victoria, and South Australia. Fl. Sept.

The Tasmanian form described above departs somewhat from the type, and was once raised to a distinct species by von Mueller as *P. semi-rubra*. It is faithfully figured in Hook. "Fl. Tas.," but, unfortunately, named *P. nana*, though the description in that work corresponds with this plant.

5. P. NANA, *R. Br.* A rather similar plant to the last, but much more slender. Leaves in a basal rosette, ovate, about ¼ inch long, on a stalk as long as the lamina. Stalk slender, minutely pubescent or papillose, with 3 or 4 loose acute bracts. Flower erect, about ½ inch long; the upper division erect, the upper third bent straight forward, acute; lower division erect, the long filiform lobes embracing and extending beyond the hood. Labellum oblong, very obtuse, much shorter than the column. Column erect, the wing with an awl-shaped but short upper process and a broad, flat, ciliate lower lobe.

Common in the north and George's Bay. Probably in many situations in heathy country, but overlooked. It also occurs in Victoria, South Australia, Western Australia, and New South Wales. Fl. Sept.

6. P. CUCULLATA, *R. Br.* Usually a very robust plant, with an almost papillose surface. Leaves usually 2-4, broad, loose, spathe-like, sheathing. Bracts about 2-3 inches long. Stem 2-9 inches long. Flower erect, about 1½ inch long; the upper division curved, and rather obtuse; lower division erect, the lobes acute, embracing but hardly extending beyond the margin of the hood. Labellum ovate-linear, obtuse, dark green, rather exceeding the column. Column erect, the wings with subulate process above and a broad flat lobe below. *P. dubia*, Hook. "Fl. Tas." (partly).

Common in numerous situations, often at a considerable altitude; also in Victoria, South Australia, and New South Wales. Fl. Sept.

7. P. FURCATA, *Lindl.* Somewhat similar, especially in the dried state, to the last. Leaves usually 1 or 2, stalked at the base, and 1 or 2 sheathing ones on the stem, but the uppermost always smallest, 1-3 inches long. Stem 6-18 inches high. Flower erect, ¾-1 inch long; the upper division describing a considerable and nearly even curve, acute; lower division erect, with long filiform lobes extending much beyond the margin of the hood. Labellum erect, but curved towards the apex, dark green, linear-ovate, exceeding the column. Column erect, the wing with a subulate upper process and a flat lower lobe. Figured in Hook. "Fl. Tas." as *P. pedunculata*.

Very common in numerous situations; also in Victoria. Fl. Nov.

8. P. PRÆCOX, *Lindl.* Leaves on a distinct stem, ovate, about ¼-½ inch long, on stalks as long as themselves. Flower-stem about 4 or 5 inches high, minutely papillose, bearing 3 or 4 bracts, each larger as the stem is ascended. Flower erect, about ¾ inch long; the upper division very curved, and ending in a rather long slender point; the lower division erect, with long filiform points embracing and much exceeding the hood. Labellum longer than the column, linear, acute. Column erect, the wing prolonged into an awl-shaped lobe above and a flat ciliated lower lobe.

Common, principally in sandy and heathy soil. It occurs also in Victoria, South Australia, and New South Wales. Fl. June-July.

9. P. OBTUSA, *R. Br.* Closely connected to the last, only of usually more slender habit and without the papillose surface. Stem 6-12 inches high, very slender. Bracts usually 4-6, the lowest minute, the uppermost narrow and acute and usually ½ inch long. Flower erect, about 1 inch long, without the filiform points; the upper division very curved, and produced into a generally long slender point, often ¾ inch long; lower division erect, the entire portion rather broad and notched in the centre, but not conspicuously differing from *P. præcox*; lobes very long, filiform. Labellum rather longer than the column, linear,

rather obtuse, or always more so than in *P. præcox*. Column erect, the wings prolonged above into awl-shaped processes, and below into flat ciliated lobes.

Common in the north and east, Mount Wellington and many places in the south; also in New South Wales, Victoria, and South Australia. Fl. Nov.-Mar.

10. P. PARVIFLORA, *R. Br.* Leaves in a separate tuft, but often arising from the base of the flowering-stem, about 2 lines long, ovate, on a stalk about as long as the lamina. Stem 2-4 inches high, slender, bearing 2 or 3 small acute bracts besides those subtending the flowers. Flowers usually 2 or 3, sometimes solitary, erect, about 3 lines long; when more than one, with a tendency to face inwards, as in *P. aphylla*; upper division curved, the point sub-acute; lower division erect, the lobes short and partially embracing the hood. Labellum linear-oblong, obtuse; the basal appendage slender, usually ending in 3 setæ. Column erect, the wing with filiform processes above, and a lower, flat, broad, ciliated lobe. Stigma very prominent, expanded into wings with a bluff, angular, upper termination, and tapering away below.

In many parts about Hobart, North Bruni, Southport, George's Bay, near Launceston. Probably common, but overlooked. It occurs also in Queensland, New South Wales, and Victoria. Fl. Mar.-Apr.

11. P. APHYLLA, *Lindl.* Not differing in habit or structure from the last beyond small, probably unstable, details, usually more robust, and the leaves never present at the time of flowering. Flowers usually 2 or 3, facing one another, about 4 lines long. The perianth as in *P. parviflora*, only rather more obtuse. Labellum narrow, ellipsoid, very obtuse; the basal appendage slender, ending in 3 setæ. Column erect, the wing nearly square, with a filiform protuberance above and a very broad, flat, ciliate lower lobe. Stigma rather large, cushion-like.

Bruni Island, Southport, George's Bay, Circular Head, &c. Fl. Nov.-Dec.

12. P. BARBATA, *Lindl.* Leaves usually about 6 or 7, at the base of the stem, ovate-lanceolate, acute, narrowed towards the stem, ½-1½ inch long. Stem 3-9 inches high, with 3 or 4 sheathing bracts. Flower erect, narrow, and flat, about 1 inch long; upper division bent forwards in the upper third, acute; lower division linear, simple or the two segments separating, bent downwards. Labellum about ½ inch long, filiform, clothed with long yellow hairs, at the end an irregular gland-like enlargement. Column erect, the wings produced above into subulate points, below into flat lobes. *P. squamata*, Hook. "Fl. Tas."

Common in very many parts and situations. It also occurs in Victoria, South Australia, New South Wales, and West Australia. It extends also to New Zealand. Fl. Nov.

13. P. MUTICA, *R. Br.* Small but robust. Leaves 4 or 5, clustered at the base of the stem, ovate, ½-1 inch long, stalked. Stem 3-9 inches high, with 3 or 4 closely-sheathing bracts besides those subtending the flowers. Flowers rather numerous, about 4 lines long, shortly stalked. Upper division of the perianth erect, sharply curved at the upper third, point short and straight; lower division very broad and concave, bent rather downwards, entire nearly to the end. Labellum about 1½ line long, broadly ovate, obtuse: the basal appendage simple, stout, erect. Column erect, wing with a very short acute upper process and a broad lower lobe curved outwards.

Common in numerous situations; also in Queensland, New South Wales, Victoria, and South Australia. Fl. Oct.

14. P. RUFA, *R. Br.* Leaves 3 or 4, in a basal rosette, ovate, ½-¾ inch long, often withered or gone before flowering. Stem 4-9 inches high, with 3 or 4 small bracts besides the floral ones. Flowers usually 3 or 4, shortly stalked. Upper division of the perianth about 4-5 lines long, curved throughout, but sharply so in the upper third; the apex a straight point, often very long, in some varieties

not 1 line long; lower division bent downwards, divided from about the middle, the length of the points correspond with those of the upper division. Labellum about 1½ line long, ovate-oblong, flat or concave above, thick and protuberant towards the base below, usually ciliate; basal appendage short and thick or obsolete. Column curving forward, the wings with a very small subulate protuberance above, and a broad, flat, lower lobe. *P. squamata*, R. Br. (partly).

George's Bay, Meander River, Port Sorell, Mount Wellington (?). It occurs nearly throughout Australia. Fl. Dec.

15. P. LONGIFOLIA, *R. Br.* Leaves always on a separate stem, sometimes arising from the base of the flowering-stem, but generally free from it, ovate to linear, ½-1 inch long, shortly stalked. Stem slender, 6-18 inches high, bearing 4 or 5 linear-lanceolate leaf-like bracts, with short, narrow, sheathing bases, besides the floral bracts. Flowers usually 4-5, in a spike-like raceme, sometimes solitary, ½-¾ inch long. Upper division of the perianth erect, much curved in the upper third, but with a short straight point; lower division descending, bifid. Labellum 2½-3 lines long, oblong, thick, with a bifid incurved apex, and a thickened erect process near the base. Column erect, the wing nearly square, margin ciliate.

Very common. It occurs also in New South Wales, Victoria, and South Australia. Fl. winter to late summer.

16. P. VITTATA, *Lindl.* Habit similar to the last. Leafy bracts rather broader, with larger and more sheathing bases. Flowers rather larger and darker, the upper division curved through the whole length. Labellum with rather less conspicuous terminal teeth and a small basal protuberance.

Islands of Bass Straits; also in Victoria, South Australia, and West Australia. Fl. June-July.

15. CALEANA.

Flowers reversed, so as to bring the labellum uppermost. Perianth-segments linear. Labellum ovate, convex, articulated on a curved, strap-like, very irritable, support. Column long, curved, with very broad inflated wings. Anther valvular. Stigma peltate.

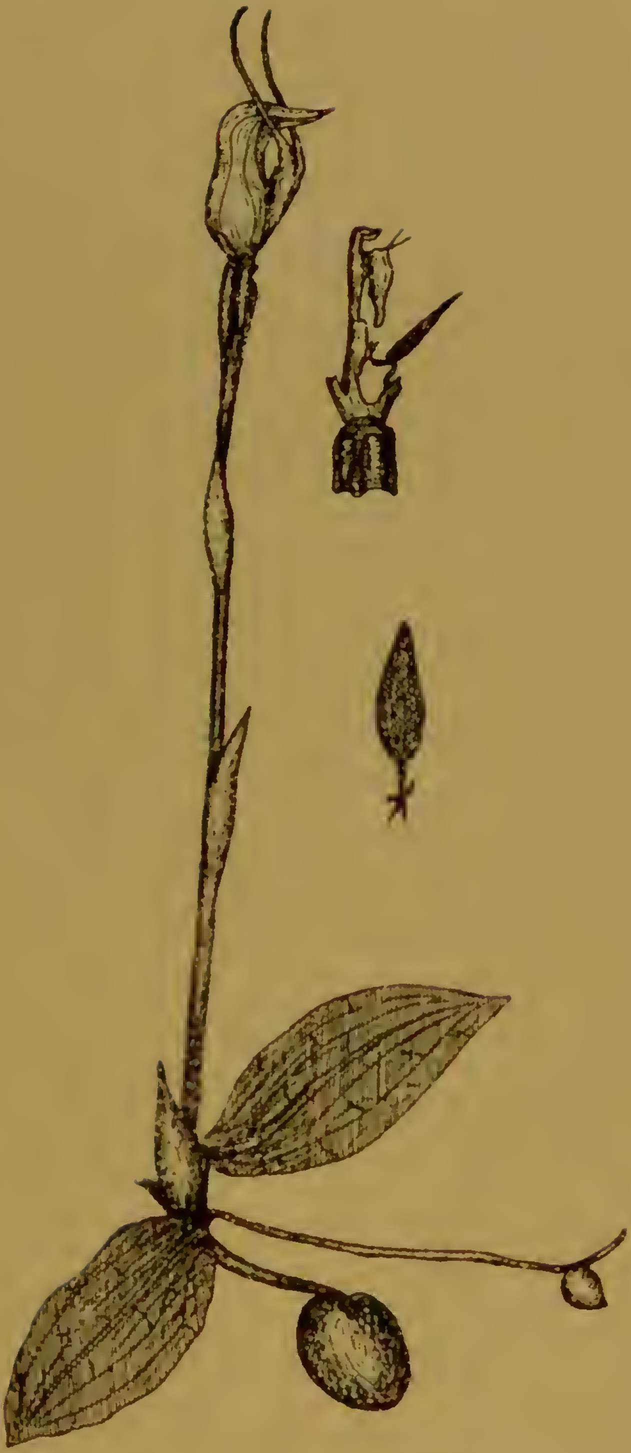
An Australian genus of 4 species.

Uppermost pair of segments recurved. Surface of labellum plain... ... ... 1. *C. major.*
All segments directed forwards. Surface of labellum nodulated ... ... 2. *C. minor.*

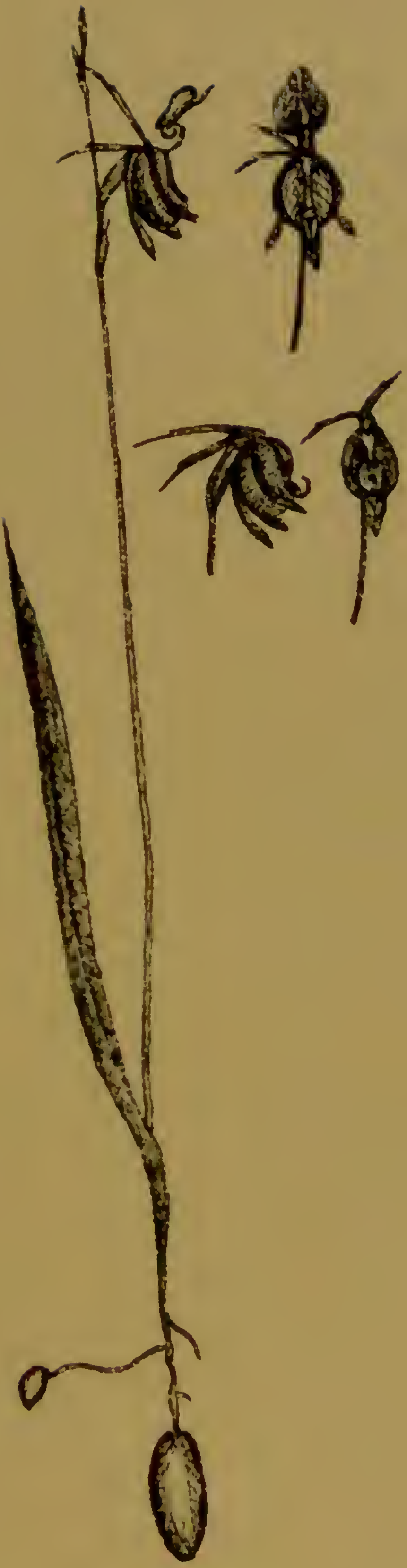
1. C. MAJOR, *R. Br.* Leaf solitary at the base of the stem, linear-lanceolate. Stem slender, 9-18 inches high. Flowers usually 2 or 3, in a terminal raceme, dark red-brown, as well as the stem and leaf, ¾-1 inch long. The segment arching over the column, lanceolate, about ¾ inch long, the side segments filiform, the normally lower pair, which are turned uppermost by reversion of the flower, curved sharply back, linear, dentate at the upper third. Labellum about 4 lines long, the centre very convex, extended into an anterior flat beak and a posterior recoiled strap, plain and shining; recurved over the top of the flower when fully out; closed in the opening between the column-wings in the bud and when irritated. Column curved, narrow, with very broad wings throughout its length, forming a dilated cup.

Common in heathy land. It occurs also in Queensland, New South Wales, and Victoria. Fl. Dec.-Jan.

2. C. MINOR, *R. Br.* Habit similar to the last, only smaller. Leaf linear, about 3 inches long. Stem about 6 inches high. Flowers usually 2 or 3, about ½ inch long, dark red-brown. Perianth-segments about ½ inch long, all



PTEROSTYLIS PEDUNCULATA. *R. Br.*



CALEANA MAJOR ·*R. Br.*

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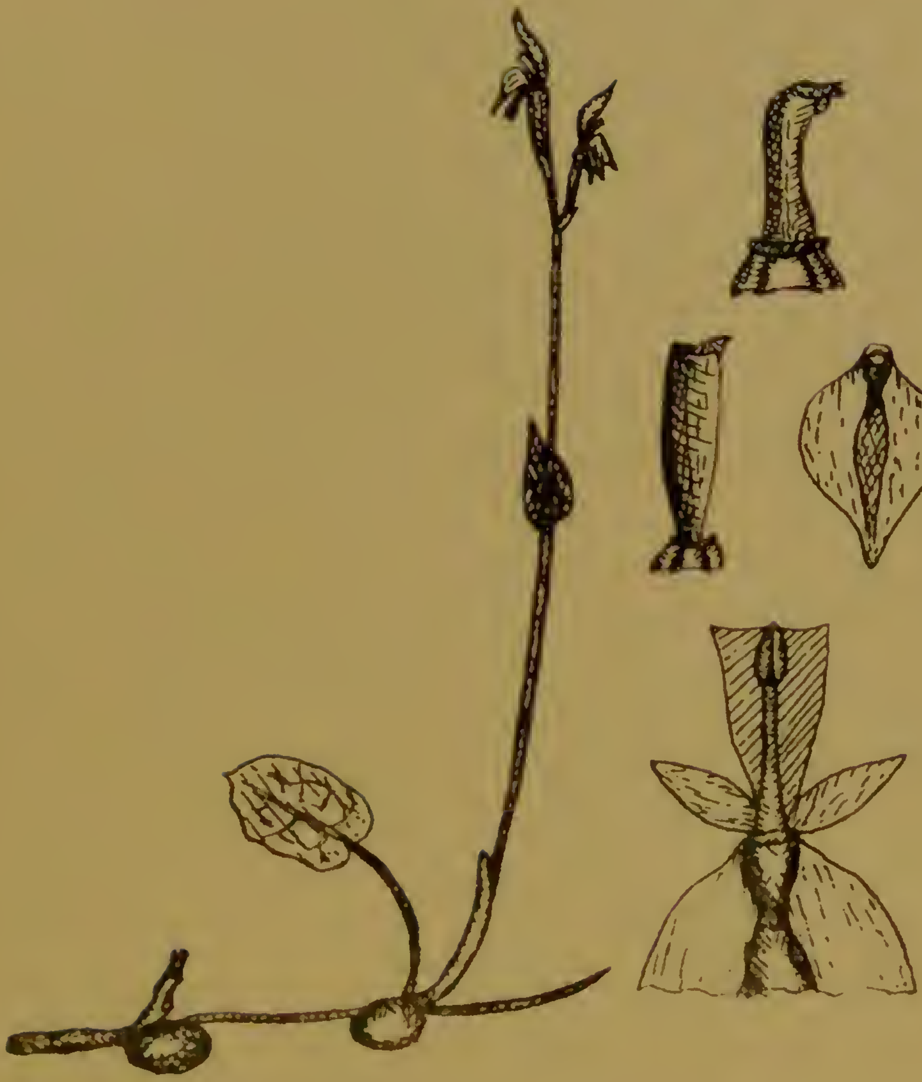


ACIANTHUS VIRIDIS. *H.*

linear, and directed forwards. Labellum and column similar to the last, only the former covered with shiny black nodulations.

Kingston, hills near Waterworks (Hobart); near George's Bay. It occurs also in New South Wales. Fl. Jan.

16. ACIANTHUS.

Three outer segments of the perianth much exceeding the inner pair. Labellum entire, rhomboid or ovate, with 2 tubercles near the base. Column narrow, slender, erect or bent forward, winged or wingless. Anther valvular.

The genus contains about 5 species, 4 of which are confined to Australia and 1 to New Zealand distribution.

Leaf red beneath, sessile at the base of the stem.
  Perianth exceeding 1 inch ... ... 1. *A. caudatus.*
  Perianth about ½ inch ... ... 2. *A. exsertus.*
Leaf pale beneath, on a long stalk. Stem bearing a
    leaf-like bract about the upper third ... ... 3. *A. viridis.*

1. A. CAUDATUS, *R. Br.* Leaf solitary, at the base of the stem, sessile, stem-clasping, cordate, about 1 inch in diameter, deep red beneath. Stem about 4 inches long. Flowers usually 2 or 3, shortly stalked, deep red. Outer perianth linear, attenuated, from 1-2 inches long, the upper one erect; inner pair linear-lanceolate, about 2 lines long, bent back. Labellum rhomboid, acute, about 3-4 lines long. Column slender, about 2 lines long, curved forward, very narrowly winged.

Near Kingston, George's Bay. Common in many situations, chiefly in the north. It also occurs in New South Wales, Victoria, and South Australia. Fl. Oct.

2. A. EXSERTUS, *R. Br.* Leaf solitary, at the base of the stem, sessile, stem-clasping, cordate, about ½-¼ inch diameter, deep red beneath. Stem 2-4 inches high. Flowers small, 4-10, deep red. Outer segments spreading, about 3 lines long, the base ovate, the apex slender, upper one erect; inner pair about 1 line long, bent back. Labellum ovate, sessile, smooth on the upper surface, except the prominent pair of basal glands, about 2 lines long. Column curved forward, about 1⅓ line long, wingless, terete, but with a prominent enlargement at the base. Stigma prominent, close below the anther.

Common in many parts near Hobart, Cascades, Mt Nelson Range, Bellerive, Kingston, &c.; Swanport, George's Bay, Circular Head. Probably very common, but overlooked. It also occurs in extra-tropical Australia. Fl. June.

> The descriptions of this and *A. caudatus* are intended to apply to the typical forms found in Tasmania, where they depart somewhat from R. Brown's descriptions.

3. A. VIRIDIS, *Hook.* Leaf ovate-cordate, about ½ inch long, crenate, on a stalk usually 1 inch long, arising from the creeping rhizome close to the flowering-stem. Stem 4-6 inches long, bearing a solitary, leaf-like, sheathing bract above the middle. Flowers usually 2, shortly stalked, pale green tinged with red; outer segments 2-3 lines long, linear to lanceolate, the upper one longest, erect, but curved rather forward; inner pair about ½ inch long, bent back. Labellum broadly rhomboid, with rounded angles, concave above, about 2 lines long; the pair of basal calli narrow, flat, and longitudinally placed, curved inwards. Column about 1½ line long, broadly winged, especially close below the anther, where it forms a prominent angle. Pollen mealy. Stigma forming a prominent protuberance close below the anther.

Common on the south-eastern slope of Mount Wellington, Native Tier, Uxbridge. Fl. Nov.-Feb.

17. ERIOCHILUS.

Upper perianth-segment short, erect; lower pair longer, spathulate, and directed forwards; side pair linear, spreading or erect, as long as the upper one. Labellum erect, and narrow at the base, entire or nearly so, expanded and recurved above, surface glandular-hairy. Column erect, nearly as long as the upper perianth-lobe, narrowly or not at all winged. Anther valvular. Stigma prominent, close below the anther.

A small genus, confined to Australian distribution.

E. AUTUMNALIS, *R. Br.* Leaf broadly ovate, ½-1 inch long, rather thick, and sometimes pubescent, solitary, sessile at the base of the stem; in apparently all Tasmanian plants rudimentary in the sheath at the flowering period, and maturing subsequently. Stem usually 3 or 4 inches high. Flowers 1-3, pink, upper segments about 3 lines long; the lowest pair about ½ inch, narrow, broadest in the middle, tapering at both ends. Labellum rather longer than the column, but the upper third sharply recurved on itself, the recurved portion much longer than broad, densely hairy, but not fimbriated on the margin, entire throughout. Column erect, about 2 lines long.

Very common in most situations, but principally in wet or dry heaths. It occurs also in Queensland, New South Wales, Victoria, and South Australia. Fl. Feb.-Apr.

18. LYPERANTHUS.

Upper segment of perianth much exceeding and curved over the column; the lower and side pairs of about the same length, linear, spreading. Labellum curved, narrow at the base, with two lateral lobes about the middle, and a terminal recurved central lobe, thickened in the centre and somewhat papillose. Column slender, curved forwards, without wings. Anther valvular. Stigma peltate, prominent, close below the anther.

The genus, as accepted by Bentham, contains but two species, both confined to Australian distribution.

L. NIGRICANS, *R. Br.* Leaf solitary, at the base of the stem, cordate, sessile, about 1-1½ inch long. Stem 2-6 inches long, clothed with 2 or 3 rather large fleshy bracts besides the floral ones. Flowers usually 2 or 3, of a fleshy consistency, veined dark red and white, about 1 inch long, nearly sessile, each in a large bract. Upper perianth-segment overarching the column, broadly lanceolate. Labellum coarsely fimbriated beyond the lateral lobes.

Near George's Bay, George Town, and Rocky Cape. Occasionally found in the south, but rare. It occurs also in New South Wales, Victoria, South Australia, and West Australia. The fleshy nature of the plant causes it to turn very black when dried, a fact responsible for the erroneous colouring of the plate in Hook. "Fl. Tas." Fl. Oct.

19. BURNETTIA.

Perianth-segments nearly equal, often partially cohering, never spreading. Labellum erect, curved, broad, entire, sessile, centre thickened, and usually broken into flat plates towards the end. Column erect or curved, broadly winged throughout, but tapering chiefly below. Anther valvular.

The genus consists of a single species, confined to Victoria and Tasmania. It closely connects *Lyperanthus* with *Caladenia*.

B. CUNEATA, *Lindl.* Leaf none on the flowering-stem, said to be developed on a separate stem previous to flowering, and to be ovate-lanceolate, acute, ¾ inch long, but doubtful. Stem 2-4 inches high, bearing 2 or 3 relatively large fleshy bracts Flowers usually 2 or 3, brown-red outside or white, the rest of the plant similarly coloured, fleshy, about ½ inch long, stalked. Labellum rather shorter than the perianth, ending very abruptly. *Lyperanthus burnettii*, F. v. M.

Southport, Port Davey, near Strahan, East Coast, Rocky Cape, Sandfly, and near Huonville. It has been gathered also in Victoria. Fl. Oct.-Dec.

20. CYRTOSTYLIS.

Perianth-segments narrow, linear, about equal, the upper one erect, the others spreading. Labellum nearly sessile, flat, entire, about as long as or slightly longer than the perianth, with 2 small protuberances near the base and a slightly thickened centre. Column slender, curved, often rather sharply bent about the centre, winged above the centre. Anther valvular. Stigma close below the anther.

A small genus, closely allied to ***Acianthus***, consisting of one Australian and two New Zealand plants.

C. RENIFORMIS, *R. Br.* Leaf solitary, sessile at the base of the stem, cordate to sessile, ½-2 inches long, pale beneath. Stem slender, 1-6 inches long. Flowers usually 3 or 4, in a loose raceme, pale red and green, ⅓-½ inch long. Labellum ovate or oblong, acute to very obtuse and notched.

Very common in heathy or dry situations. It occurs also in Queensland, New South Wales, Victoria, South Australia, and Western Australia. Fl. Sept.

21. CALADENIA.

Perianth-segments about equal in length, narrow or rather broad, short or much elongated, the upper one erect or over-arching the column. Labellum curved, often recurved at the base, broad, obscurely or distinctly 3-lobed, the surface always bearing more or less numerous and prominent gland-like developments along the centre. Column erect or curved forwards, conspicuously winged, especially in the upper part. Anther valvular, usually with a point above and beyond it. Stigma small, peltate, close under the anther.

A rather large genus of varied forms, running into adjoining genera. Closely connected with *Burnettia* and *Lyperanthus*, through *C. suaveolens*.

Perianth-segments linear, elongated, 1½-2 inches long.
Labellum-margin plain or nearly so.
Perianth-segments hirsute, tapering to the end. Column-wings terminating abruptly above the middle ... . 3. *C. filamentosa.*
Perianth-segments glabrous, outer ones terminating in thickened enlargements. Wing tapering below ... . 4. *C. clavigera.*
Labellum-margin coarsely fimbriated.
Fimbriations small towards the base ... 5. *C. patersoni.*
Fimbriations long, erect, none towards the base.. 6. *C. dilatata.*
Perianth-segments under 1 inch.
Leaf oblong to lanceolate.
Flowers pink.
Perianth spreading 2. *C. latifolia.*
Perianth with 2 erect club-like segments ... 13. *C. menziesii.*
Flowers yellow. Plant glabrous ... 1. *C suaveolens.*
Leaf linear.
Flowers pink to dusky-brown.
Upper segment erect. Labellum-glands in 2 rows... ... ... 7. *C. carnea.*

Upper segment over-arching; glands in about 4 rows.
Glands closely massed along the centre of the labellum ... ... 10. *C. congesta.*
Glands not touching.
Flowers pink, marked with yellow and white ... ... 8. *C. angustata.*
Flowers dusky, marked with purple ... 9. *C. testacea.*
Flowers blue.
Labellum with broad lateral lobes and 2 rows of glands ... ... 11. *C. cœrulea*
Labellum with obsolete lateral lobes and numerous glands ... ... 12. *C. deformis.*

1. C. SUAVEOLENS. *Reichb.* A glabrous, rather fleshy. plant. Leaf solitary, lanceolate, rather thick, with incurved margins, more than half as long as the stem. Stem usually 1-1½ foot high, with 2 or 3 bracts. Flowers about 4 or 5, each subtended by a rather large bract, nearly sessile, distant. Perianth yellow and brown; segments about ¾ inch long, linear, except the upper one, which is broader erect or slightly over-arching. Labellum about 4 lines long, with short, obtuse, lateral lobes and a terminal lobe, the upper surface bearing 2 rows of small, irregular, flat plates on the centre, and numerous papillæ generally dispersed. Column about 2½ lines long, curved forwards, with equal, not broad, wings.

George's Bay, East Coast, Bruni Island, Sandfly; also in New South Wales and Victoria. Fl. Oct.-Jan.

2. C. LATIFOLIA, *R. Br.* Pubescent, except the flowers. Leaf solitary, oblong-lanceolate, flat, 1-4 inches long. Stem 2-10 inches high, usually with 1 linear bract. Flowers usually 2 or 3, pink, stalked. Segments about ¾ inch long, ovate-lanceolate. Labellum with prominent, erect, lateral lobes and a recurved central lobe, fimbriated on the margin; surface glands usually few, and arranged in a semicircle near the centre. Column winged, but not broadly so.

Widely, but very sparely, distributed. Circular Head, George Town, George's Bay, &c. It occurs also in New South Wales, Victoria, South Australia, West Australia, and Queensland. Fl. Sept.

3. C. FILAMENTOSA, *R. Br.* Slender and pubescent, glandular, hairy above and on the perianth-lobes. Leaf linear, about 4 inches long. Stem about 6 inches high, with a linear bract about the middle. Flowers 1-3 dark-red. Perianth-segments slender, linear, tapering at the ends, about 1½ inch long. Labellum broadly ovate, with obsolete lateral lobes and a recurved point, margin entire, and two rows of glands along the centre. Column about 4 lines long, very curved, the wings very broad towards the apex, ending in the upper third, with a short descending lobe.

Southport, Bruni Island, East Coast, George's Bay, George Town, &c.; also in New South Wales, South Australia, and West Australia. Fl. Nov.-Dec.

4. C. CLAVIGERA, *A. Cunn.* Slightly hairy on the leaf and stem. Leaf solitary, linear-lanceolate, about 3 inches long. Stem slender, about 6 inches long, bearing a narrow linear bract above the middle. Flower solitary, pale red and yellow. Outer perianth-segments about 1⅓ inch long, linear, terminating in rather enlarged terete clubs; inner pair rather shorter, tapering to the end. Labellum recurved, ovate, without marginal fimbriation, but with 4 rows of glands along the centre. Column curved forward, the wing very broad in the upper part, tapering below.

Bellerive, George's Bay, and many places in the north. Widely distributed, but confounded with *C. patersoni.* It occurs in New South Wales and Victoria. Fl. Nov.

5. C. PATERSONI, *R. Br.* Similar to the last, but more robust, and the leaf correspondingly broader. Flowers 1-3, white or pale yellow to dark red. Segments 2-3 inches long, linear-lanceolate, the margins incurved and connate from the middle, the consequently terete portion tapering to the ends. Labellum ovate, the very long tapering apex recurved; margin fimbriated from near the base to the recurved end, the fimbriæ being longest in the middle, and becoming smaller towards each end of the series. Column as in the last. *C. pallida*, Lindl. (partly).

Very common in most situations; also in New South Wales, Victoria, and South Australia. Fl. Oct.-Dec.

> In Tasmania this species is always distinct from *C. dilatata* and *C. clavigera*, but in the dried state is often confused. *C. filamentosa* is conspicuously distinct in habit, to say nothing of its 2 rows of glands and very different column-wings; all are sometimes clubbed as one species. *C. pulcherrima*, F. v. M.

6. C. DILATATA, *R. Br.* Similar in habit to the last. Flower probably always solitary, pale green-yellow. Outer perianth-segments about 1½-2 inches long, ending in thickened clubs about ½ inch long; inner segments shorter, with very short clubs or simply terete ends. Labellum rather long, ovate, with a slender recurved point; the margin with few erect, long, slender processes about the middle; glands in 4 rows, along the centre. Column as in *C. clavigera*.

Bellerive, Kingston, Bruni Island, East Coast, George's Bay, Circular Head, &c.; also New South Wales, Victoria, South Australia, and Western Australia. Fl. Dec.

7. C. CARNEA, *R. Br.* In the typical form small and slender, pubescent. Leaf solitary, linear, about 3 inches long. Stem about 4-6 inches long, with a small bract about the centre. Flower generally solitary, pink to nearly white. Upper perianth-segment oblong, lanceolate, erect, about ½ inch long, the other 4 about the same size, and similar in shape, but all directed forwards. Labellum about 3 lines long, 3-lobed; the lateral lobes erect, obtuse, rather large, and clasping the column; the terminal lobe small, slender, and recurved; 2 rows of yellow glands along the centre. Column rather shorter than the labellum; the wing broad near the top, narrow in the lower half

Very common; also in Queensland, New South Wales, Victoria, and South Australia. Fl. October.

> The form above described is very distinct, and generally constant, but is very close to *T. angustata*. It could not, however, be made to include that form without also *C. testacea*; an amalgamation that is hardly warranted. The figure in Hooker's "Fl. Tas." is taken from *C. angustata*.

8. C. ANGUSTATA, *Lindl.* Of similar habit to *C. carnea*, but usually more robust. Flowers 1-3, dark red and white, sometimes nearly white. Upper perianth-lobe very curved over the column, about ¼ inch long. Labellum about 4 lines long, 3-lobed; the lateral lobes obtuse, not raised much beyond the margin; the terminal lobe nearly as long as the rest of the labellum, recurved; glands white or yellow, irregular, or in four rows along the centre. Column not materially differing from *C. carnea*.

Very common. Often ascending to the summits of mountains. Fl. Oct.-Jan.

> The species is doubtfully distinct from *C. testacea*.

9. C. TESTACEA, *R. Br.* Leaf linear, nearly as long as the stem. Stem 4-9 inches long, with a bract about the middle. Flowers 1-5 or 6, in a terminal raceme, dusky-green or grey. Perianth as in *C. angustata*. Labellum 3-lobed, the lateral lobes very short and obtuse, the terminal lobe recurved; glands

purple, in 4 irregular lobes, more capitate than in allied species. Column as in *C. carnea*.

Common, especially in poor land; also in New South Wales and Victoria. Figured in Hooker's "Fl. Tas." as *C. alata*, but incorrectly coloured. Fl. Oct.-Nov.

10. C. CONGESTA, *R. Br.* Very similar in habit to *C. carnea*. Perianth with an over-arching upper segment, as in *C. angustata*, but narrower, about ½ inch long. Labellum narrow, nearly ½ inch long, 3-lobed; the lateral lobes erect, very prominent; the terminal lobe straight or slightly recurved, about as long as the rest of the labellum; the whole of the centre and upper surface of the terminal lobe, from base to apex, densely covered with swollen purple glands. Column as in *C. carnea*.

George's Bay and many localities in the north. It occurs also in New South Wales and Victoria. Fl. Nov.-Dec.

11. C. CŒRULEA, *R. Br.* A small plant, seldom exceeding 2 or 3 inches, nearly glabrous. Leaf linear, about 2 inches long. Stem 2-3 inches high, with a solitary, small, appressed bract about the centre. Flower solitary, blue. Perianth-segments spreading, equal, lanceolate, about ½ inch long. Labellum about 4 lines long, broad from the base, 3-lobed; the lateral lobes broad, erect; the terminal lobe lanceolate, recurved, plain or nearly so on the margin; glands in 2 rows along the centre. Column about 4 lines long, slightly bent forward, narrowly and equally winged.

Recorded from Tasmania, but doubtful. It occurs in New South Wales and Victoria. Fl.

12. C. DEFORMIS, *R. Br.* Usually small, pubescent. Leaf narrow-linear, 2-4 inches long. Stem 4-6 inches high, with a solitary linear bract about the middle. Flower solitary, blue or white Perianth-segments spreading, equal, oblong-lanceolate, about ¾ inch long. Labellum about ½ inch long, narrowed towards the base; lateral lobes hardly apparent; terminal lobe recurved, fimbriate on the margin; glands numerous, and crowded along the centre. Column as in *C. cærulea*. *C. barbata*, Hook. "Fl. Tas."

Very common; also in New South Wales, Victoria, and South Australia. Fl. Oct.

13. C. MENZIESII, *R. Br.* Leaf flat, ovate-oblong, about 1½ inch long Stem usually about 6 inches long, with 1 sheathing bract about the middle. Flower 1 or 2, pink and white. Upper perianth-segment over-arching the column, about 4 lines long; lowest pair directed forward, lanceolate, about 4 lines long; side pair about ¾ inch long, erect, narrow-linear. Labellum ovate, about 3 lines long, the side lobes hardly raised above the margin, terminal lobe short and recurved; glands small, in 2 or 4 rows. Column about 3 lines long, curved forward, the wings extending throughout, but slightly broader above than below.

Bruni Island, Southport, East Coast, &c.; also in Victoria, South Australia, and West Australia. Fl. Nov.

22. CHILOGLOTTIS.

Perianth with usually a broad upper segment and the others linear, all about equal in length. Labellum on a very slender support, irritable, entire, the upper surface bearing few or many conspicuous glands. Column rather long, curved forwards, winged often at the top only. Anther valvular. Stigma peltate close below the anther.

The genus contains but 2 Australian species, 1 from Auckland Islands, and 1 intermediate between *Chiloglottis* and *Caladenia* from New Zealand.

Side segments bent back. Labellum narrow, covered with glands ... ... 1. *C. diphylla.*
Side segments sub-erect. Labellum broad, with few glands ... ... 2. *C. gunnii.*

1. C. DIPHYLLA, *R. Br.* Leaves 2, at the base of the stem, narrow-oblong, acute, narrowed into a short stalk, 1-2 inches long. Stem usually 3 or 4 inches high, much elongating after flowering, with a sheathing bract a little below the flower. Flower solitary, green and brown; upper segment erect, narrow, $\frac{3}{4}$ inch long, lanceolate, acutely pointed; lowest pair narrow, linear, curved; side pair linear-lanceolate, bent downwards and backwards. Labellum narrow at the base, broad near the end, acute, covered, except on the broader portion, by thick glands in the centre and slender ones at the side. Column slender, the wing narrow above, extended at the side of the anther, vanishing below.

Very common, but not flowering freely; often overlooked accordingly; also in Queensland, New South Wales, and Victoria. Fl. Sept.-Mar.

2. C. GUNNII, *Lindl.* Leaves as in the last. Stem short, usually about 1 inch till after flowering, the bract subtending the flower. Flower solitary, green and brown; upper segment broadly spathulate, acute, about 1 inch long; lower pair linear, bent forward; side pair lanceolate, sub-erect. Labellum broadly cordate, $\frac{1}{2}$-$\frac{3}{4}$ inch long, bearing few large black glands in the middle. Column bent forwards, wing broad above and extended behind the anther, vanishing below.

Very common. It occurs also in Victoria and New South Wales. Fl. Oct.-Jan.

23. GLOSSODIA.

Perianth-segments nearly equal, spreading. Labellum entire, without fimbriæ or glands, but with 1 or 2 free or nearly free basal appendages. Column erect or nearly so, broadly winged, especially near the apex. Anther valvular. Stigma peltate close below the anther.

A small genus, confined to Australia; only distinct from *Caladenia* by the absence of glands from the labellum, and the peculiar appendage.

G. MAJOR, *R. Br.* Leaf and stem delicately hairy. Leaf oblong, 1-2 inches long, solitary at the base of the stem. Stem slender, about 9 inches long, with a small bract below the centre. Flower usually solitary, blue to white. Perianth-segments about $\frac{3}{4}$ inch long, broadly lanceolate. Labellum about 3 lines long, concave-convex, densely covered with minute papillose pubescence; the basal appendage solitary, yellow, about 1 line long, filiform, with a broad head. Column 3 lines long.

Very common. It occurs also in Queensland, New South Wales, Victoria, and South Australia. Fl. Oct.

ORDER LXXVI.—*BURMANNIACEÆ.*

Flowers regular. Perianth superior, tubular, 6-lobed, or rarely reduced to 3. Stamens 3 or 6, inserted in the perianth-tube. Ovary inferior, 3-celled or 1-celled with 3 parietal placentas. Ovules numerous. Style single. Stigma 3-branched. Fruit capsular. Seeds minute.

A tropical order of herbs. Many genera have become parasitic or saprophytic.

THISMIA.

Perianth campanulate, 6-lobed. Stamens 6, included. Ovary 1-celled, with 3 parietal placentas.

A small genus, hitherto confined to the tropics. There are several small genera closely allied. The Tasmanian plant is distinct in detail from any, but is most closely connected with *Thismia*. It, however, differs in its placentation from the definition of the order, and from the definition of *Thismia*, in many details.

T. RODWAYI, *F. v. M.* A small saprophytic plant without chlorophyll, completely subterranean except the flower. Stem slender, creeping underground, with few branches, about 2 or 3 inches long, leafless. Branches erect, bearing few small, lanceolate, colourless, bract-like leaves, each branch terminating in a solitary flower at the surface of the ground. Flower subtended by an involucre of 3 partly-combined bracts. Perianth crimson and yellow, about ¾ inch long, the tube companulate; lobes 6, much shorter than the tube, 3 incurved and connate at their apices, and 3 shorter, broad, free, and recurved. Stamens 6, inserted into the orifice of the perianth-tube, but reflected into the tube; the filaments flattened, adnate near their ends, extending beyond the anthers. Anthers of 2 free cells. Ovary 1-celled. Ovules numerous, on a free central placenta, each attached by a long funiculus. Style single. Stigmas 3, but each divided to the base into 2 linear lobes.

Gully on eastern slope of Mount Wellington. Fl. Dec.-Jan.

ORDER LXXVII. *IRIDACEÆ.*

Perianth superior (in the aberrant genus, *Hewardia*, nearly inferior), of 6 partially-united segments, in 2 series, often differing greatly in shape. Stamens 3, in some aberrant forms 6, usually inserted into the perianth. Anthers opening outwards. Ovary 3-celled, with several ovules in each. Style solitary, with 3 stigmatic branches.

World-wide distribution.

Stamens 3.
  Perianth with 3 large and 3 very small segments.
    Perianth divided to the base ... ... 1. *Diplarrhena.*
    Perianth with a long tube ... ... 2. *Patersonia.*
  Perianth-segments equal.
    Flowers few together, white ... ... 3. *Libertia.*
    Flower single, pink ... ... 4. *Trichonema.*
    Ovary nearly superior ... ... 5. *Hewardia.*
Stamens 6. Flower green ... ... 6. *Campynema.*

1. DIPLARRHENA.

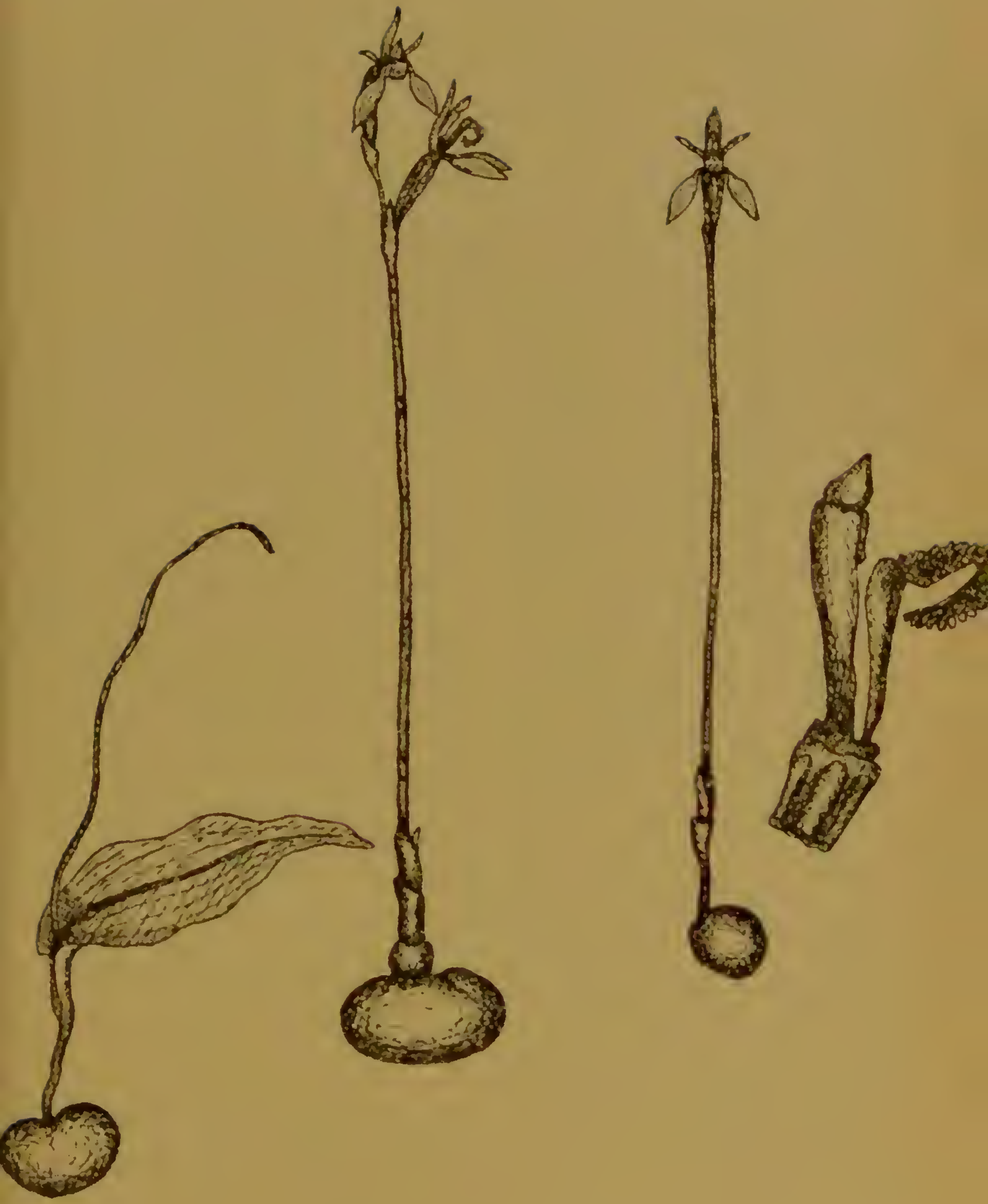
Perianth divided to the base; 3 outer segments spreading, broad; 3 inner ones narrow and sub-erect. Stamens 3, but 1 rudimentary. Style long and slender, with 3 unequal, stigmatic, flat branches. Capsule acutely 3-angled. Seeds circular, very flat.

The genus contains but 1 species.

D. MORÆA, *Lab.* Leaves and flowering-stem arising from a short creeping rootstock. Leaves rather numerous, flat, rather thick, ¼-¾ inch broad, and 1-2 feet long, pointed, pale green. Stem about 2 feet high, slender. Flowers few, in a terminal spike, usually only one open at a time, enclosed in a pair of narrow bracts about 2 inches long. Outer segments spreading, obovate, about 1 inch long, white; inner segments narrow, yellow, about ½ inch long. *D. latifolia*, B., included.

Very common; also in New South Wales and Victoria. Fl. spring and summer.

D. latifolia, B., is only a robust alpine form common on mountains.



ERICCHILUS AUTUMNALIS. *R. Br.*

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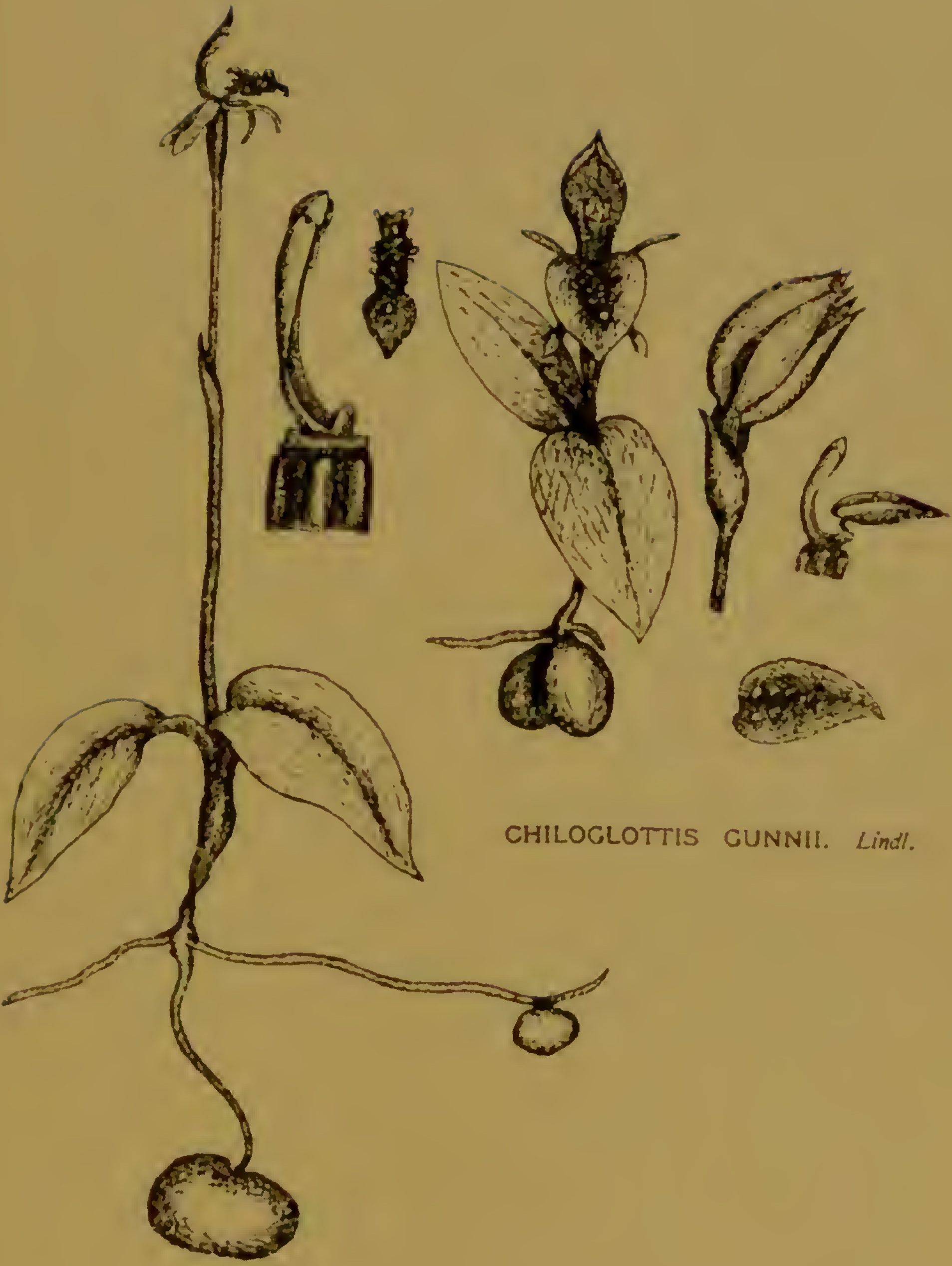

CHILOGLOTTIS GUNNII. *Lindl.*

CHILOGLOTTIS DIPHYLLA. *R. Br.*

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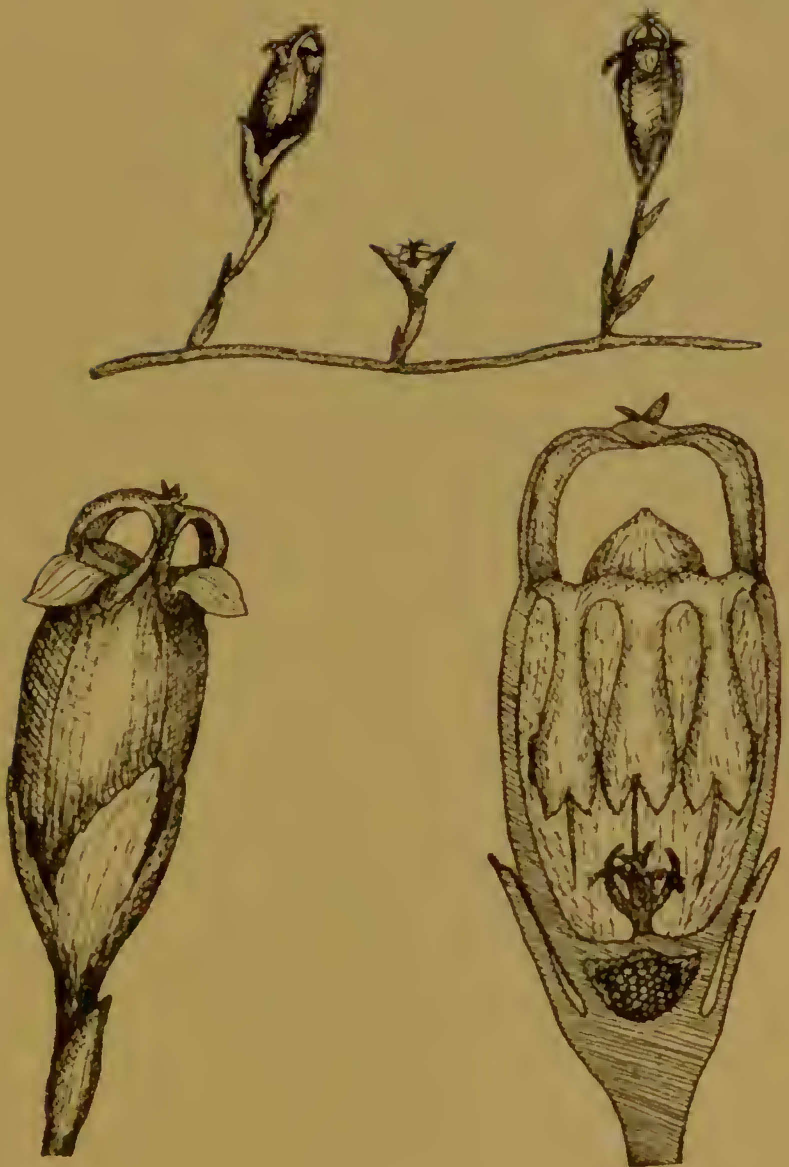


THISMIA RODWAYI. *F. v. M.*

[illegible]

2. PATERSONIA.

Perianth with a long linear tube and 6 lobes, 3 outer broad and spreading, 3 inner very small and erect. Stamens 3, united in a tube to the orifice of the perianth, free portion very short. Anthers oblong, all perfect. Style slender, exceeding the perianth-tube. Stigmatic branches 3, reflexed so as to appear as a head to the style. Capsule obtusely 3-angled. Seeds, at least in Tasmanian species, oblong, black, and shining.

Confined to Australian distribution.

P. GLAUCA, *R. Br.* Plant tufted. Stems and leaves arising from a short creeping base. Leaves flat, about 1-2 lines broad and 1 foot long, acute, pale green. Stems usually, but not always, much shorter than the leaves, bearing a single terminal spike enclosed in 2 reddish-brown bracts, each about 1½ inch long, the longitudinal veins fairly distinct. Flowers blue, 2-4 in each spike, each subtended by a transparent bract. Perianth-tube exceeding the bracts, lobes about ½ inch long, inner lobes hardly 1 line long. Stigmatic lobes fringed.

Common on wet heaths. It occurs also in New South Wales, Victoria, and South Australia. Fl. Nov.-Jan.

P. LONGISCAPA, *Sweet*, is also, probably by mistake, recorded from Tasmania. Many Tasmanian forms of *P. glauca* closely approach it.

3. LIBERTIA.

Perianth divided to the ovary into 6 nearly equal segments. Stamens 3, arising from the base. Filaments slender. Style single, but divided above into 3 filiform lobes. Capsule small, ovoid, or globular.

A genus of few species, extending to New Zealand and South America. Included by Mueller in *Sisyrinchium*.

L. PULCHELLA, *Spreng.* Plant tufted. Leaves clustered at the base in 2 opposite rows, grass-like, 2-6 inches long, 2-3 lines broad. Stem from shorter to longer than the leaves. Flowers in interrupted clusters towards the ends of the stem, each cluster subtended by a leafy bract. Flowers usually 3 or 4, in a cluster, each subtended by a bract, and mounted on a slender stalk ½-1½ inch long. Ovary globular, about 1 line long. Perianth white, the segments spreading, 2-3 lines long, oblong. *L. lawrencii*, Hook.

Common in many parts, but chiefly in the north and west; it occurs also in New South Wales and Victoria, and extends also to New Zealand. Fl. Nov.-Jan.

4. TRICHONEMA.

Perianth regular, spreading, united only at the base.

A small European and South African species.

T. ROSEUM, *Ker.* Small, bulbous. Leaves radical, linear, 3-10 inches. Flower pink, solitary, on a stalk shorter than the leaves.

A South African species. Introduced. Domain (Hobart), and probably elsewhere. Fl. Sept.-Oct.

5. HEWARDIA.

Perianth spreading, united only at the base, regular. Stamens 3, adnate to the base of the three inner segments. Filaments short. Anthers opening outwards. Ovary 3-celled, with numerous ovules; combined at the base with the perianth, otherwise free and superior. Style short, with 3 stigmatic branches.

A genus of but one species usually referred to *Liliaceæ* on the strength of the nearly superior ovary.

H. TASMANICA, *H.* Small, rigid. Leaves rigid, lanceolate, opposite, mostly radical, equitant, 4-6 inches. Stem simple, erect, 6 inches to 1 foot, bearing few leafy bracts. Flower solitary, shortly stalked, subtended by a pair of sheathing bracts. Perianth purple or yellow. Segments narrow, lanceolate, spreading, 1-1½ inch long.

Mount La Perouse, Arthur Range, to the West Coast. Fl. Dec.-Jan.

6. CAMPYNEMA.

Perianth divided to the ovary into 6 nearly equal segments. Stamens 6, arising near the base of the styles opposite the perianth-segments. Filaments slender. Anthers opening outwards. Styles much thickened at the base, slender, free, and recurved above. Capsule narrow-oblong, with 3 obtuse angles. Seeds slightly flattened.

The genus is confined to one species, endemic in Tasmania. It is an anomalous member of the order, and is often referred elsewhere.

C. LINEARE, *Lab.* Leaves 1 or rarely 2, at the base of the stem, 2-6 inches long, 3-4 lines broad. Stem 2-10 inches high, bearing 1 or 2 leafy bracts besides those subtending the flowers. Flowers solitary to 3 or 4 at intervals, on slender stalks. Ovary slender and about ¼ inch long when in flower, enlarging subsequently. Perianth green, the segments about 2 lines long, ovate, with a narrow base. Anthers bright red, oblong. The filaments recurved after maturity.

Mount Field, Southport, Recherche, Strahan to Mount Dundas, Rocky Cape, &c. Fl. Dec.-Mar.

> A reduced alpine form has been described as *C. pygmæum*. The leaves and stem are usually under 1 inch.

ORDER LXXVIII.—*AMARYLLIDACEÆ.*

Perianth superior. Segments 6, partially united or free, all equal or rarely unequal. Stamens 6, rarely 3, inserted about the base of the segments. Filaments free or united at the base. Anthers opening inwards. Ovary sometimes free from the perianth above, 3-celled. Ovules usually numerous, but sometimes only 1 or 2 in each cell. Style single, rarely branched. Fruit capsular.

A large order, common to all but cold regions. Neither of the Tasmanian genera belong to the understood type of the order, and are often treated as forming distinct orders.

Flowers many in a head. Stamens 3... ... ... 1. *Hæmodorum.*
Flowers solitary. Stamens 6 ... ... 2. *Hypoxis.*

1. HÆMODORUM.

Perianth-segments equal or nearly so. Stamens 3, inserted at the base of the inner segments. Ovary usually quite inferior, but in the Tasmanian plant nearly superior, 3-celled, with 2 ovules in each. Style simple, entire. Capsule usually half or almost entirely superior. Seeds flat.

The genus is confined to Australia.

H. DISTICHOPHYLLUM, *Hook.* Densely tufted, with a short, thick, creeping rootstock. Leaves in 2 opposite rows, with broad sheathing bases and cylindrical acute laminæ, 2-4 inches long, and 2-3 lines broad. Flower-stem 3-6 inches high, thick and fleshy, bearing 2 or 3 broad, usually black, sheathing bracts. Flowers in a dense, irregular, terminal panicle, each subtended by a linear bract, which, like all the bracts, are red, but become dry and black towards the ends: usually

7 or 8 in the panicle. Flower-stalks about 2-4 lines long, bearing a small linear bract halfway. Outer perianth-segments membranous, narrow-lanceolate, and similar in consistency and colour to the bracts; inner segments pale green, fleshy, obovate, about 3 lines long. Filaments rather longer than the perianth-segments, shortly oblong, bright red. Style slender, about as long as the stamens. Stigma minute, capitate. Ovary nearly superior from the first, conspicuously 3-lobed, globose.

Lake Pedder, Cox Bight, Macquarie Harbour, Huon Plains. Fl. Sept.-Oct.

2. HYPOXIS.

Perianth divided to the ovary into 6, rarely 4, nearly equal segments. Stamens equal in number to the perianth-segments, and inserted at their base. Filaments free. Anthers lobed at the base. Ovary 3 or 2-celled, with many ovules in each. Style slender, with 3 or 2 short stigmatic branches. Capsule oblong, a small portion above the perianth. Seeds globular.

The genus is widely spread in tropical and south temperate regions.

Plant hairy. Anthers deeply divided at the base ... 1. *H. hygrometrica.*
Plant hairless. Anthers nearly entire.
  Stamens nearly equal. Capsule oblong ... 2. *H. glabella.*
  Stamens unequal. Capsule globular ... ... 3. *H. pusilla.*

1. H. HYGROMETRICA, *Lab.* Root thickened into a tuber. Leaf and stem bearing few, rather long, slender hairs. Leaves at the base of the stem, usually about 3 or 4, with a narrow sheathing base and a flat linear lamina, mostly 2-6 inches long. Flower-stem rather shorter than the leaves, slender. Flower yellow, usually solitary, about ¾ inch diameter. Perianth-segments lanceolate, spreading. Anthers deeply divided at the base. Style rather long, with short, erect, stigmatic branches.

Very common, especially in wet heaths; also Queensland, New South Wales, Victoria, and South Australia. Fl. Nov.-Feb.

2. H. GLABELLA, *R. Br.* Similar in habit to the last, but glabrous. Leaves filiform, and channelled above, about 3-6 inches long, sheathing at the base. Flower-stem shorter than the leaves. Flower yellow, solitary, about ½-¾ inch diameter. Stamens all nearly about the same length. Anthers entire or nearly so at the base. Style short. Capsule oblong.

Very common in grassy places. It occurs also in Victoria, South Australia, and West Australia. Fl. Sept.-Jan.

3. H. PUSILLA, *Hook.* Very similar in habit and details to the last, and perhaps a variety only. Perianth under ½ inch diameter, yellow or white. Stamens unequal. Capsule very short, nearly globular.

Circular Head, Glenorchy, &c.; also Victoria, and extending to New Zealand. Fl. Sept.-Jan.

ORDER LXXIX. *LILIACEÆ.*

Perianth inferior; segments 6, free or partially united, usually in 2 series, all equal, or the outer shorter or longer than the inner series. Stamens usually 6, inserted towards the base of the perianth. Ovary 3-celled, usually with numerous, rarely with only 1 or 2, ovules in each cell. Style mostly single, with a minute capitate stigma, rarely divided into 3 filiform branches. Fruit a berry or capsule.

The order is very large, and distributed almost throughout the world.

Leaves principally at the base of the stem.
Flowers few or many, in a loose or dense inflorescence, on stems nearly as long as, or longer than leaves.
Flowers in loose panicles or in small clusters along the stem.
Flowers in spreading panicles.
Styles 3. Filaments simple ... ... 5. *Milligania.*
Style simple. Filaments hairy or thickened.
Flower blue. Filaments enlarged above 3. *Dianella.*
Flowers yellow or blue. Filaments minutely hairy ... ... 13. *Stypandra.*
Flowers white or red. Filaments hairy above ... ... 14. *Arthropodium.*
Flowers few, at intervals.
Stamens simple ... ... 10. *Cæsia.*
Stamens with a tuft of hairs ... . . 12. *Tricoryne.*
Flowers in dense spikes, solitary umbel. simple raceme or few-flowered cyme.
Flowers in many-flowered raceme.
Flowers red. Stamens simple ... .. 4. *Blandfordia.*
Flowers yellow. Stamens bearded 8. *Bulbine.*
Flowers few, in a raceme or cyme.
Flowers blue. Stamens simple ... ... 11. *Chamæscilla.*
Flowers blue or yellow. Stamens hairy 13. *Stypandra.*
Flowers red. Stamens hairy at anther 14. *Arthropodium.*
Flowers in a terminal umbel ... ... 7. *Burchardia.*
Flowers in a dense spike ... ... 18. *Xanthorrhæa.*
Flowers solitary, or (if many) on very short stems.
Flowers solitary, terminal ... . 16. *Herpolirion.*
Flowers few or many.
Flowers solitary, at intervals. Stem creeping 9. *Thysanotus.*
Flowers few. Leaves slender ... ... 15. *Chlorophyton.*
Flowers many. Leaves broad, rigid ... 1. *Astelia.*
Leaves not conspicuously basal.
Leaves in numerous clusters along stem ... 17. *Laxmannia.*
Leaves 1-3 on stem, sheathing ... ... 6. *Wurmbea.*
Leaves on upper part of stem, lanceolate ... 2. *Drymophila.*

1. ASTELIA.

Perianth membranous, divided nearly to the base into 6 equal segments. Stamens 6. attached at the base of the perianth. Filaments slender, rather short, reduced to small antherless teeth in the flowers bearing perfect ovaries. Anthers ovate. Ovary 3-celled or 1-celled, with parietal placentas. Ovules numerous. Style short, deeply divided into 3 branches. Fruit a berry.

A genus of few species, widely spread in temperate parts of the Southern Hemisphere.

A. ALPINA, *R. Br.* A densely-tufted alpine plant, forming closely-compacted masses of considerable size. covered with loose, silky. white hairs. Leaves linear-lanceolate. with a sheathing base and spreading lamina, 3 inches to 1 foot long, ½-1½ inch broad. Flower-stem slender, short, bearing an irregular panicle, much shorter than the leaves, and few linear leaf-like bracts. Staminate flowers in a loose spreading panicle; perianth-segments about 2 lines long, recurved; ovary about 1½ line long, but without ovules. Pistillate flowers in a short compact panicle; perianth-segments 3 lines long. sub-erect; stamens reduced to rudimentary filaments; ovary with a short style and blunt short lobes, 1-celled, with 3 parietal placentas. Fruit oblong, bright red, about ½ inch long. Seeds black and shining.

Very common on mountains. It occurs also in Victoria and New South Wales. Fl. May.

2. DRYMOPHILA.

Perianth divided to the base into 6 equal spreading segments. Stamens 6, inserted at the base of the perianth. Filaments slender. Anthers oblong. Ovary 3-celled, with many ovules in each. Styles 3, slender, recurved. Fruit a berry.

The genus contains but two species, and is confined to Australian distribution.

D. CYANOCARPA, *R. Br.* Stems simple, slender, and erect, from a tuberous rootstock, the upper leafy portion curved and often branched, ½-2 feet high. Leaves lanceolate, alternate, in 2 opposite rows, confined to the upper portion of the stem, 1-3 inches long. Flowers white, few, solitary in the upper axils, pendulous, on slender stalks. Perianth-segments 2-3 lines long, lanceolate. Berry globular or oblong, usually tourquoise blue, rarely white.

Very common in woods, principally in hilly situations. It occurs also in New South Wales and Victoria. Fl. Nov.-Jan.

3. DIANELLA.

Perianth divided to the base into 6 equal segments. Stamens 6, inserted at the base of the perianth, those opposite the inner segments partially adnate to them at the base. Filaments thickened and fleshy near the anther. Anthers linear, opening by terminal pores. Ovary 3-celled, with several ovules in each. Style slender, with a minute capitate stigma. Fruit a berry.

The genus is small, but spreads from Asia to New Zealand.

Leaves serrate on the margin and midrib. Thickened top of the filament about as long as the anther ... 1. *D. tasmanica.*
Leaves plain on margin or nearly so. Thickened top of filament short.
  Leaves flat. Anthers yellow ... ... 2. *D. longifolia.*
  Leaves with revolute margins. Anthers black or nearly so ... ... 3. *D. revoluta.*

1. D. TASMANICA, *Hook.* Leaves in 2 opposite rows, at the base of the stem, loosely sheathing, lanceolate, 6 inches to 2 feet long, the margins and midrib scabrous. Stem erect, with a few leaves towards the base, simple, 1-3 feet long. Flowers numerous, in a loose compound panicle, dark or pale blue. Perianth-segments oblong-lanceolate, about 4 or 5 lines long. Thickened apex of the filament much longer than the slender portion, often as long as the anther. Anther linear-oblong, but variable in shape and size. Berry purple, nearly globular, ½ inch diameter. *D. archeri*, Hook. (included).

Very common; also in Victoria and New South Wales. Fl. Sept.-Jan.

2. D. LONGIFOLIA, *R. Br.* Leaves in opposite rows, at the base of the stem, the sheathing base short and rounded; the lamina 6 inches to 2 feet long and ¼-½ inch broad, flat, plain or very slightly scabrous on the margin. Stem 6 inches to 2 feet high. Flowers numerous, in a loose, spreading, compound panicle, dark blue. Perianth-segments narrow, oblong, about 4 lines long. Thickened apex of the filament orange-coloured, much shorter than the slender portion. Anther pale yellow, oblong, linear, usually longer than the filament. Berry purple, globular, about ^{1} inch diameter.

Widely dispersed, but hardly common. It also occurs throughout Eastern and Southern Australia. Fl. Oct.-Nov

Var. *aspera*. A small form, with the leaves scabrous on the margins and midrib.

3. D. REVOLUTA, *R. Br.* Leaves in opposite rows, the bases closely sheathing and compressed, the upper part being acutely keeled and the lower portion rounded, at least in most Tasmanian forms; laminæ narrow, with revolute margins, 6 inches to 2 feet long. Stems and inflorescence as in *D. longifolia*. Filaments much shorter than the anther, the thickened apex bright yellow and about as long as the slender portion. Anther nearly black, linear-oblong.

Common in most localities, at least in the south; also throughout Eastern and Southern Australia. Fl. Oct.-Dec.

4. BLANDFORDIA.

Perianth tubular, with 6 short broad lobes. Stamens 6, inserted near the middle of the perianth-tube. Filaments slender. Anthers oblong. Ovary fusiform, 3-celled, with numerous ovules in each. Style short, and a mere prolongation of the ovary. Fruit capsular, long, slender, and 3-angled.

A small genus, confined to Australia.

B. MARGINATA, *Herb.* Leaves numerous, arising from a thickened rootstock, 6 inches to 1½ foot long, ¼-½ inch diameter, the margin more or less serrated. Stem simple, erect, 1-2 feet high. Flowers numerous, in a terminal raceme, on stalks about 1-2 inches long. Perianth deep red externally, yellow within, tube 1-1¼ inch long, lobes 2-3 lines, campanulate. Stamens adnate to the perianth considerably above the middle. *B. grandiflora*, Hook. (but not of R. Br.).

Common in numerous situations in the south and west. Fl. Oct.-Mar.

5. MILLIGANIA.

Perianth tubular at the base; segments 6, equal, spreading. Stamens 6, inserted at the mouth of the tube. Filaments slender, rather short. Anthers ovate. Ovary 3-celled, with numerous ovules in each. Style short, deeply 3-lobed. Fruit a 3-lobed capsule. Flowers hermaphrodite.

The genus is confined to the 4 Tasmanian species.

Perianth-segments 4-6 lines long.
  Flowers numerous. Leaves long.
    Leaves 1-2 feet long, ¼-½ inch wide ... 1. *M. longifolia*.
    Leaves ½-1 foot long, ½-1 inch wide ... ... 2. *M. densiflora*.
  Flowers 3-6. Leaf about 1 inch long ... ... 3. *M. johnstoni*.
Perianth-segments 2 lines long ... ... 4. *M. stylosa*.

1. M. LONGIFOLIA, *Hook.* Radical leaves, 1-3 feet long, usually under ½ inch diameter, those on the stem broader and becoming bract-like. Stem simple, erect, 1-2 feet high. Flowers very numerous, in a much-branched terminal panicle, white. Perianth-segments nearly linear, about 4 lines long, the tube as long as, and enclosing, the ovary. Style short.

On many river-banks on the West Coast. Fl. Nov.-Dec.

2. M. DENSIFLORA, *Hook.* Densely clustered habit. Leaves with a very broad sheathing base, laminæ somewhat recurved, 6 inches to 1 foot long, and often 1 inch broad. Stem erect, simple, bearing 1 or 2 bract-like leaves, about 6 inches to 1 foot high. Flowers in a terminal, branched, narrow panicle. Perianth as in *M. longifolia*, only rather longer.

Mounts Olympus, Sorell, La Perouse, Dundas, Hartz, Humboldt, &c. The species does not differ in any essential detail from *M. longifolia*. Fl. Nov.-Jan.

3. M. JOHNSTONI, *F. v. M.* Leaves lanceolate, acute, about 1 inch long. Stem 1-3 inches high, bearing 3-6 flowers in a terminal corymb, each in the axil

of a bract nearly as long as itself. Perianth about 4 lines long, the tube about as long as the segments, segments narrow-oblong. Style slender, about as long as the ovary, shortly 3-lobed.

Huon Plains. Fl. Dec.

4. M. STYLOSA, *F. v. M.* Radical leaves, 6 inches to 1 foot long, and ¾-1 inch broad. Stem simple, erect, 1-1½ foot high. Flowers numerous, in a terminal, rather dense, panicle. Perianth-tube very short, segment about 4 lines long, reflexed. Style as long as the ovary, very slender, shortly 3-lobed. Capsule hardly 2 lines diameter. ***Astelia stylosa***, F. v. M.

Mount La Perouse, Huon Plains, Adamson Peak. Fl. Dec.-Jan.

6. WURMBEA.

Perianth divided to the middle or to the base into 6, or rarely 8, equal spreading segments. Stamens as many as the perianth-segments, inserted at the base of the segments. Filaments slender. Anthers ovate. Ovary 3-celled, with several ovules in each. Styles 3, slender, recurved. Fruit a 3-lobed capsule.

The genus is small, and is distributed chiefly in West Australia and South Africa. The Tasmanian plant and one other species were made a distinct genus, ***Anguillaria***, by R. Brown, on the strength of the free perianth-segments.

W. DIOICA, *F. v. M.* Root bulbous. Leaves usually 2 or 3, on the stem, with broad sheathing bases and narrow laminæ, 2-4 inches long. Stem erect, simple, 2-6 inches high. Flowers polygamous, usually 2 or 3, in a terminal interrupted spike, sometimes solitary and terminal. Perianth-segments free, narrow-oblong, about 3 lines long, white, usually marked with purple. ***Anguillaria dioica***, Benth. "Fl. Aust." ; *A. dioica* and *A. uniflora*, Hook. "Fl. Tas."

Very common in grassy places; also throughout extra-tropical Australia. Fl. Sept.

7. BURCHARDIA.

Perianth of 6 distinct equal segments. Stamens 6, attached to the base of the perianth. Filaments rather thickened and flat, except near the anther. Anther narrow-oblong. Ovary prominently 3-angled, 3-celled, with numerous ovules in each, narrowed above into a short style with 3 filiform recurved lobes. Fruit a 3-lobed capsule.

The genus contains but the one species.

B. UMBELLATA, *R. Br.* Stem simple, erect, 1-2 feet high. Leaves 2 or 3, on the stem, the lower one with a short sheathing base and a slender lamina, usually about 6 inches long, the upper ones smaller and broader. Flowers numerous, in a terminal umbel, surrounded by an involucre of small bracts. Flower-stalks slender, ½-2 inches long. Perianth white and red, the segments ovate, 3-6 lines long. Capsule about ½ inch long.

About George's Bay and many localities in the north, Ellendale. It occurs also in New South Wales, Victoria, South Australia, West Australia, and Queensland. Fl. Oct.

8. BULBINE.

Perianth of 6, equal, free or nearly free, spreading segments. Stamens 6, attached at the base of the perianth. Filaments slender, with a dense tuft of clavate hairs at or above the middle of 3 or all of them. Anthers narrow-oblong. Ovary 3-celled, with few or many ovules in each. Style filiform, with a minute stigma, or shorter with a capitate stigma. Fruit a rather succulent capsule. Seeds angular, black.

A common South African genus, with 2 representatives in Australian distribution.

All stamens bearded. Style long, slender, curved ... 1. *B. bulbosa.*
Three stamens unbearded. Style short, stout, straight 2. *B. semibarbata.*

1. B. BULBOSA, *Haw.* Roots thickened. Leaves slender, cylindrical, from few to many inches long. Stem simple, erect, from 3-18 inches high. Flowers very numerous, in an elongating raceme, yellow. Perianth-segments about ½ inch long. Stamens all equal, and with a circle of clavate hairs about the middle. Ovary 3-lobed. Style slender, curved, more than twice as long as the ovary. Stigma minute. Ovules rather numerous, but only few maturing. Capsule spherical, about 3 lines diameter.

Very common in rocky and sandy places; also in Queensland, New South Wales, Victoria, and South Australia. Fl. Oct.-Feb.

2. B. SEMIBARBATA, *Haw.* Roots fibrous. Habit and general details similar to the last, only the flowers less numerous and smaller. Stamens opposite the outer segments short and beardless, those opposite the inner segments twice as long, and copiously bearded near the anther. Style rather thick, straight, about as long as the ovary. Stigma capitate. Capsule spherical, about 2 lines diameter.

Huon Road at Watchorn's Hill; near Launceston. Reported as common in various localities; also throughout extra-tropical Australia. Fl. Oct.-Dec.

9. THYSANOTUS.

Perianth of 6 free, nearly equal, segments, the 3 outer ones narrow with thin entire margins, the 3 inner ones broader with broad thin-fringed margins, the whole perianth spirally twisting after flowering. Stamens 6 or 3, inserted at or on the base of the perianth. Filament short, slender. Anther linear, usually longer than the filament. Ovary 3-celled, with 2 ovules in each. Style long, slender, and curved. Fruit an oblong or globular capsule.

The genus is almost entirely Australian, one species extending to China.

T. PATERSONI, *R. Br.* Root of numerous elongated tubers. Leaves few, at the base of the stem, slender, filiform, about 2 inches long, soon dying, those on the stem reduced to minute bracts. Stem very slender, trailing among undergrowth, branched. Flowers usually solitary, on the ends of the small branches, reddish-purple. Perianth-segments about ¼ inch long. Stamens 6, 3 longer than the others.

Common in grassy and sandy places; also throughout extra-tropical Australia. Fl. Oct.-Dec.

10. CÆSIA.

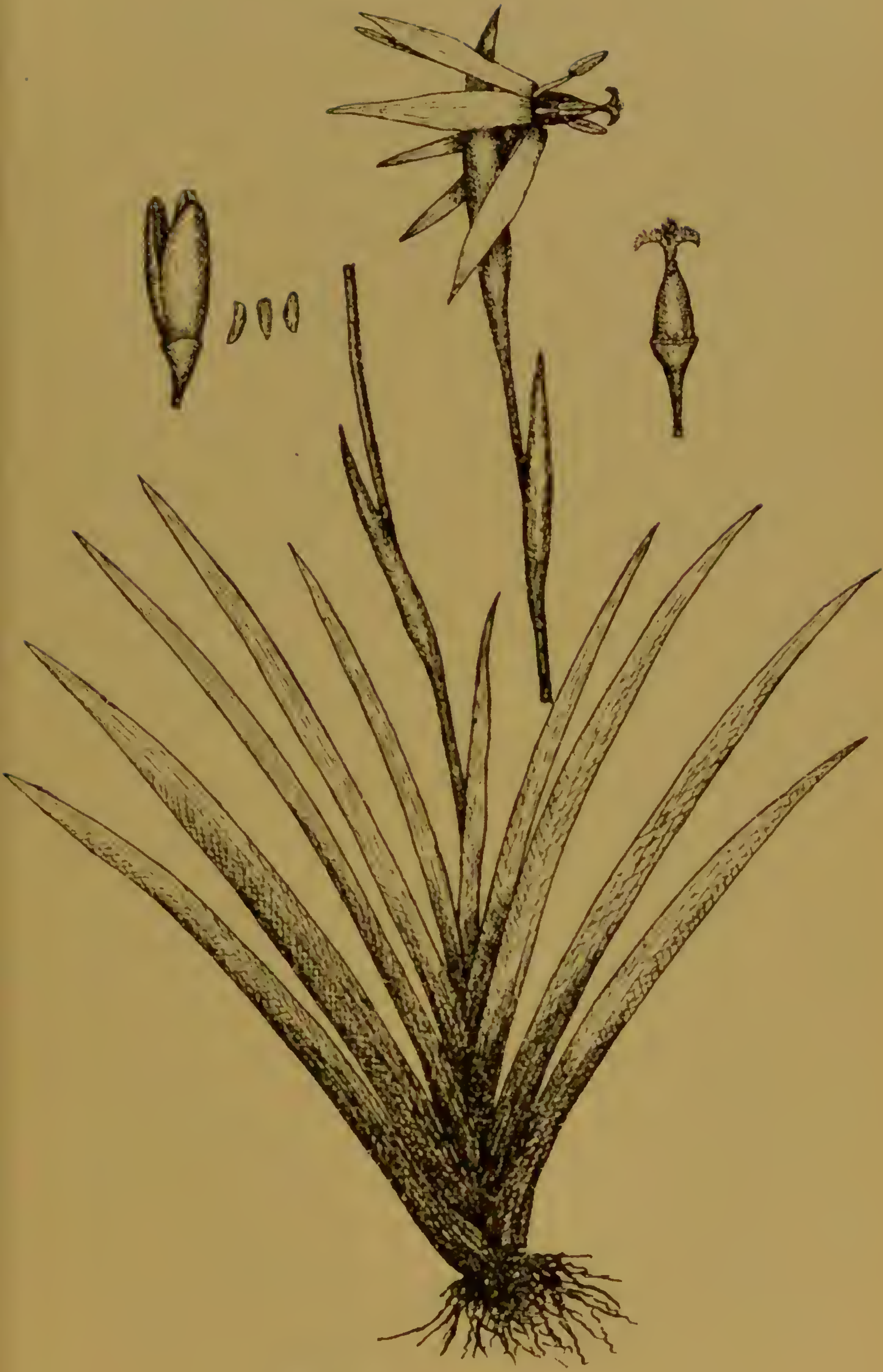
Perianth of 6 equal segments, shortly united at the base, twisting round the pistil after flowering. Stamens 6, inserted at the base of the perianth. Filaments slender. Anthers oblong, short, recurved. Ovary 3-celled, with 2 ovules in each. Style simple, slender. Fruit a 3-lobed capsule.

A South African genus, represented in Australia by 4 closely-allied, doubtfully distinct, species.

Perianth-segments exceeding 3 lines ... ... 1. *C. vittata.*
Perianth-segments under 3 lines ... ... 2. *C. parviflora.*

1. C. VITTATA, *R. Br.* Leaves at the base of the stem linear to lanceolate, but variable, 2-10 inches long. Stem erect, simple or slightly branched, usually 6 inches to 1 foot high. Flowers in small few-flowered clusters, at intervals along the upper half of the stem. Perianth-segments usually blue, 3-4 lines long. Capsule about 2 lines broad, depressed at the top.

Common in many parts in the north, George's Bay. It occurs throughout extra-tropical Australia. Fl. Dec.-Jan.



HEWARDIA TASMANICA. *H.*

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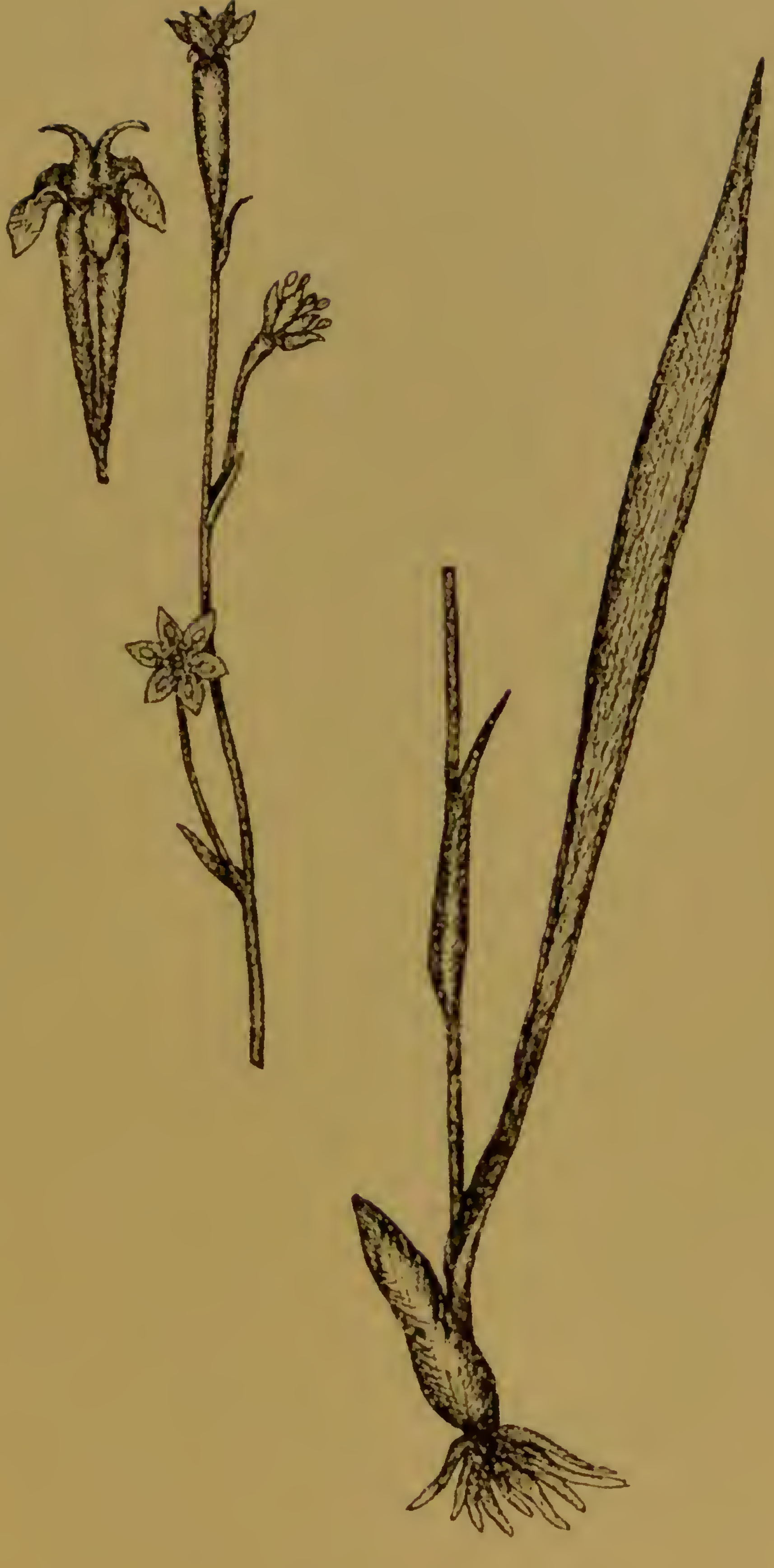

CAMPYNEMA LINEARE. *Lab.*

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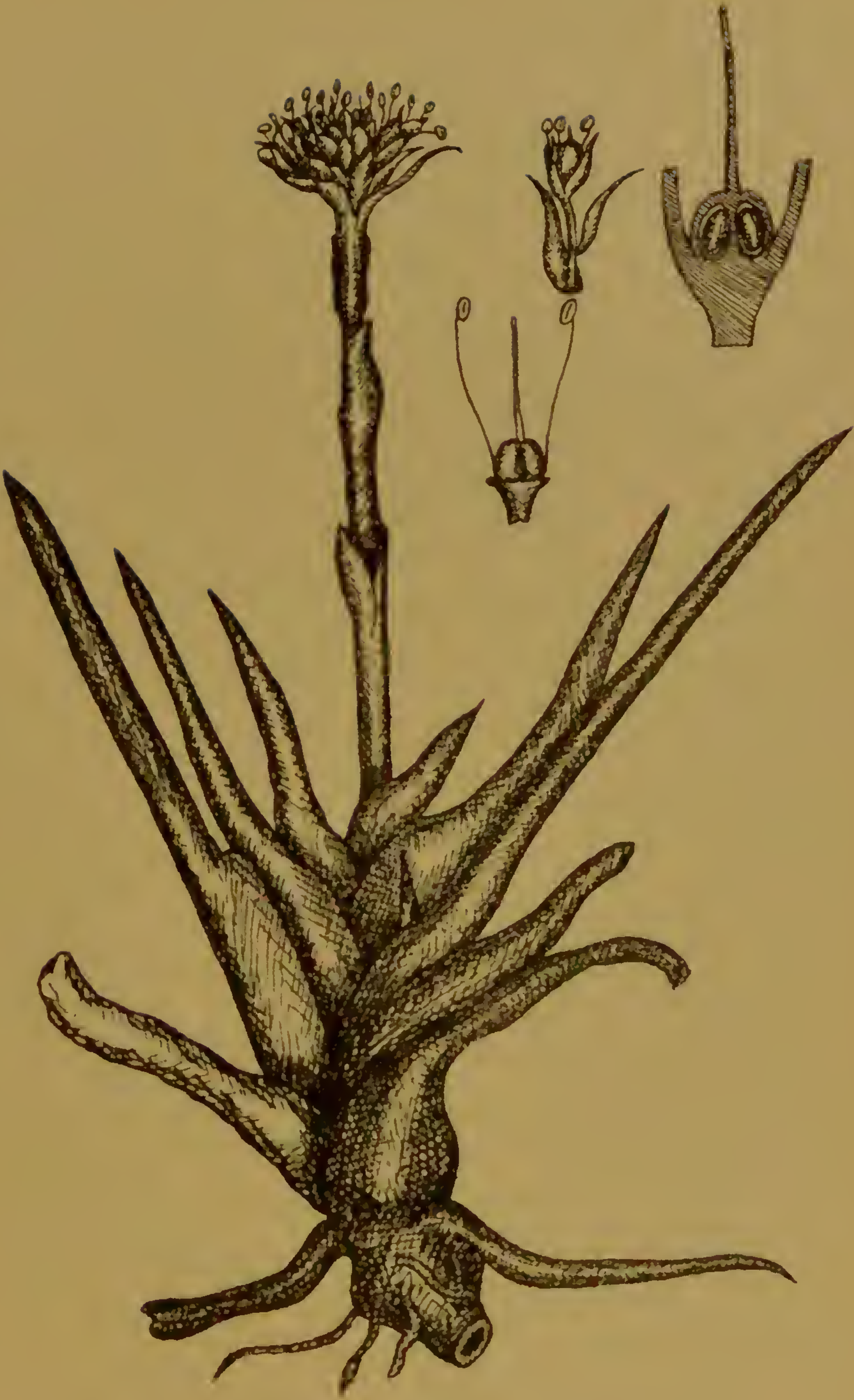

HÆMODORUM DISTICHOPHYLLUM *H.*

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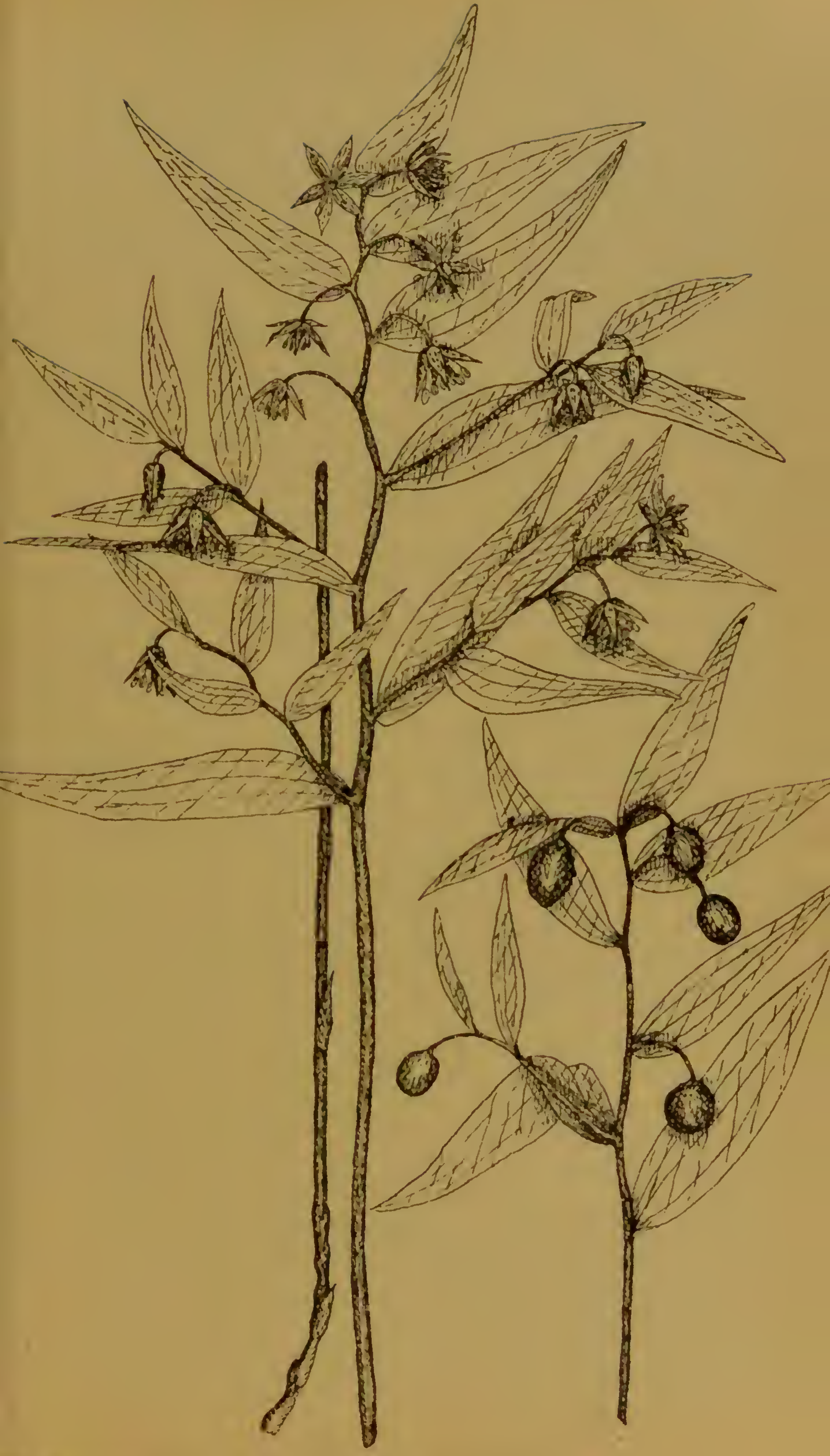


DRYMOPHILA CYANOCARPA. R. Br.

2. C. PARVIFLORA, *R. Br.* Differing from *C. vittata* only in size, being generally smaller in form and detail. Leaves narrow-linear. Flowers mostly reddish. Perianth-segments 2-3 lines long.

George's Bay to Launceston; also throughout extra-tropical Australia. Fl. Dec.

11. CHAMÆSCILLA.

Perianth of 6 equal, free or slightly united, segments, twisting round the pistil after flowering. Stamens 6, inserted at the base of the ovary. Filaments slender. Anthers small, ovate. Ovary 3-celled, with numerous ovules in each. Style filiform, with a capitate or 3-lobed stigma. Fruit a 3-lobed capsule.

The genus consists of two Australian species, and closely connects *Cæsia* and *Chlorophyton.*

C. CORYMBOSA, *F. v. M.* Leaves at the base of the stem, spreading, spathulate or lanceolate, about 2-3 inches long. Stem erect, simple, leafless, about 4-6 inches high. Flowers blue, few, in a loose terminal panicle or cyme. Perianth-segments broadly oblong, about 4 lines long. Capsule about 4 lines long, very conspicuously 3-lobed.

Very common in grassy places: also in Victoria, South Australia, West Australia, and New South Wales. Fl. Sept.

12. TRICORYNE.

Perianth of 6 free linear segments, spirally twisted round the pistil after flowering. Stamens 6, inserted at the base of the ovary. Filaments slender, bearing a tuft of hairs between the centre and the anther. Anthers narrow-oblong. Ovary 3-celled, with 2 ovules in each cell. Style slender, entire. Fruit capsular, but the component carpels separated from one another except at the base.

The genus is purely Australian, and contains but few species.

T. ELATIOR, *R. Br.* Stem slender, erect, usually 2 or 3 times divided or branched, 6 inches to 2 feet high. Leaves chiefly at the base of the stem, grass-like, 2-6 inches long: stem-leaves reduced to sheathing bracts at the branches. Flowers in small lateral and terminal distant umbels of 3 or 4 flowers in each, sometimes reduced to few flowers on rather long stalks in an irregular raceme. Perianth-segments about 3 lines long.

Clydevale, Cheshunt, South Esk River. It occurs also throughout extra-tropical Australia. Fl. Oct.-Dec.

13. STYPANDRA.

Perianth of 6, nearly equal, free, spreading segments, not twisting after flowering. Stamens 6, inserted below the ovary. Filaments slender, with a tuft of hairs below the anther, or minutely papillose throughout. Anthers narrow-oblong, coiled after maturity. Ovary 3-celled, with several ovules in each. Style long and slender. Stigma minute. Fruit capsular.

The genus is Australian, and contains but 2 species.

S. CÆSPITOSA, *R. Br.* Usually densely tufted. Leaves at the base of the stem, grass-like, 3-12 inches long, 1-3 lines wide. Stem erect, simple, usually bearing 1 or 2 leafy bracts. Flowers in few-flowered umbels, on lateral or terminal branches of the stem, each flower on a long slender stalk, sometimes reduced to 1 or 2 flowers. Perianth commonly yellow in Tasmania, sometimes blue, rarely white. Segments narrow-oblong, obtuse, 3-6 lines long. Filaments 2-3 lines long, flexuose, covered with minute papillose hairs from the base.

Very common: also in New South Wales, Victoria, Queensland, and Western Australia. Fl. Nov.-Dec.

The yellow-flowered form bears shorter perianth-segments and longer filaments than the blue-flowered, and varies from the type in general habit. *S. umbellata*, R. Br., in Hook. "Fl. Tas."

14. ARTHROPODIUM.

Perianth of 6 free spreading segments, the inner 3 rather broader than the outer, and often fringed, not twisting after flowering. Stamens 6, inserted at the base of the segments. Filaments slender, with generally 2 rows of hairs on the upper part. Anthers narrow-oblong, remaining erect or nearly so. Ovary 3-celled, with several ovules in each. Style long, slender. Stigma minute.

A small genus, confined to Australian, New Zealand, and adjacent distribution.

A. STRICTUS and another species, not Tasmanian, are often formed into a distinct genus (*Dichopogon*), on the strength of their 2 very short hairy processes being attached to the base of the anthers and free from the filaments.

Flowers nearly white.
  Tall, many-flowered ... ... 1. *A. paniculatum.*
  2-6 inches. Flowers few ... ... 2. *A. minus.*
Flowers red-purple ... ... 3. *A. strictum.*

1. A. PANICULATUM, *R. Br.* Leaves at the base, 3-12 inches long, 2-4 lines broad, sheathing. Stem erect, 4 inches to 2 feet, much divided into flowering branches above. Flowers mostly 2 or 3 together, long-stalked at intervals, white, marked with red. Perianth-segments 3 lines long, the inner ones crisped on the margin. Filaments slender, about 1½ line long, the upper half, or rather more, bearing 2 opposite rows of hairs. Anthers shorter than the filament, curved after maturity, but not coiled as in *Stypandra.*

Very common; also New South Wales, Victoria, and South Australia. Fl. spring and summer.

2. A. MINUS, *R. Br.* Smaller than the last, 2-6 inches. Flowers single, on a simple or nearly simple stem. Filaments with the two hairy processes extending nearly to the base. Otherwise as in the last, and doubtfully distinct from it.

In pastures, Sorell, Avoca, Bushy Park, and many parts in the north; also New South Wales, Victoria, and South Australia. Fl. Sept.-Dec.

3. A. STRICTUM, *R. Br.* Leaves grass-like, all at the base, 3-10 inches long, 2-3 lines wide. Stem erect, rarely branched. The flowers solitary or clustered, on rather long slender stalks, distant, forming an elongated raceme. Perianth purple-red, the segments oblong, about ½ inch. Filaments short, flat, bearing a hairy process on each side at the base of the anther, attached to the anther, and apparently, in most Tasmanian forms at least, attached also to the filament. Anther oblong, straight, twice as long as the filament. *Dichopogon strictus*, Benth.

Common in the central and northern districts. Rokeby Road; also in Queensland, New South Wales, Victoria, and South Australia. Fl. Nov.-Dec.

A. LAXUM, Sieb., in Hook. "Fl. Tas.," has probably not been found in Tasmania.

15. CHLOROPHYTON.

Perianth of 6 free, equal or nearly equal, spreading segments. Stamens 6, not twisting, inserted below the ovary or at the base of the perianth. Filaments slender, flat, hairless. Anthers shorter than the filaments, narrow-oblong. Ovary 3-celled, with few or many ovules in each. Style slender, long. Stigma small. Fruit a prominently 3-lobed capsule.

A rather large and widely-distributed tropical genus. Only 2 species spread to Australia, one of which is endemic in Tasmania.

C. ALPINUM, *Baker*. Leaves at the base of the stem, grass-like, mostly 4-6 inches long and 1-2 lines broad. Stem simple or rarely branched, 1-2 inches high. Flowers shortly stalked, solitary or few together, at intervals along the stem. Perianth-segments about 2 lines long. Capsule flattened above, about 3 lines long. Seeds about 2 in each cell. *Cæsia alpina*, Hook. "Fl. Tas."

Western mountains. Fl. Dec.-Jan.

16. HERPOLIRION.

Perianth of 6 equal segments, erect at the base, curving outwards. Stamens 6, attached to the base of the perianth. Filaments slender. Anthers linear, erect. Ovary 3-celled, with several ovules in each. Style slender. Stigma minute. Fruit capsular, often 2-celled.

The genus contains but one species.

H. NOVÆ-ZELANDIÆ, *Hook*. Stems arising from a creeping rhizome. Leaves numerous, linear, 1-2 inches long. Flower solitary, on a stalk shorter than the leaves. Perianth blue or nearly white, about ¾ inch long. *H. tasmaniæ*, Hook.

Western mountains, Lake St. Clair, near Hamilton, Hampshire Hills. It occurs in Victoria, and spreads to New Zealand. Fl. Dec.-Jan.

17. LAXMANNIA.

Perianth of 6 segments, the outer ones free, the inner shortly united. Stamens 6, 3 inserted below the ovary, and 3 to the middle of the inner segments. Filaments slender. Anthers short, 2-lobed at the base. Ovary 3-celled, with 2-4 ovules in each cell. Style short, slender. Stigma dilated, entire. Fruit a capsule, enclosed in the persistent perianth.

A purely Australian genus.

L. SESSILIFLORA, *Decaisne*. Stems much-branched, wiry, procumbent or ascending, often clothed on the young parts with loose woolly hairs. Leaves mostly tufted, filiform, ¼-¾ inch long. Flowers few together, sessile, in small heads interspersed with scarious bracts, in the leaf tufts, rarely solitary, and shortly stalked. Perianth-segments about 2 lines long, persistent, the outer ones nearly scarious. *L. minor*, Hook.; *Bartlingia sessiliflora*, F. v. M.

Very common in many heathy places; also in Victoria, South Australia, and West Australia. Fl. Oct.-Nov.

18. XANTHORRHŒA.

Perianth of 6 distinct segments, outer 3 scarious and glume-like, inner 3 petaloid. Stamens 6, inserted below the ovary or at the base of the perianth. Filaments very long, slightly flattened. Anthers small, oblong. Ovary 3-celled, with few ovules, tapering into a slender style. Stigma small. Fruit a crustaceous capsule. Seeds flat, margined, 1 or 2 in each cell. Stem sub-erect, thick, covered with the bases of dead leaves. Leaves cylindrical or angled, long, filiform, numerous at the top of the stem. Flowering-stalk terminal, erect, simple, bearing a dense spike of flowers and brown scarious bracts.

An Australian genus of peculiar habit, connecting the lilies and rushes, and placed, according to individual opinion, in either order.

Spike about 6 inches long and ½-¾ inch diameter ... 1. *X. minor.*
Spike about 2-6 feet long and 1½-3 inches diameter ... 2. *X. australis.*

1. X. MINOR, *R. Br.* Stem very short and thick. Leaves crowded, 1-2 feet long, somewhat flattened, but angled, about 1½ line broad. Flowering-stem 1-2 feet long, the dense spike covering about 6 inches of its apex, and about ½-¾ inch diameter. Outer perianth-segments narrow, acute, about 2 lines long; inner segments slender at the base, with spreading broad tips, shortly exceeding the

outer segments. Stamens much exceeding the perianth. Capsule acute, about $\frac{1}{2}$ inch long.

Said to occur in many parts, but doubtful; also in New South Wales and Victoria. Fl. Nov.-Dec.

2. X. AUSTRALIS, *R. Br.* Stem often 1-2 feet above the ground. Leaves mostly 3 or 4 feet long, angled, about $1\frac{1}{2}$-2 lines broad. Flowering-stem erect, simple, 3-8 feet high, the spike about 2 or 3 inches diameter, and covering rather more than the upper half. Outer perianth-segments narrow, convex, acute, about 4 lines long; inner segments narrow, with a broader apex, about as long as the inner ones. Stamens about $\frac{3}{4}$ inch long. Capsule obtuse, about 4 lines long.

Bruni Island, Grass-tree Hill, Richmond Road, George's Bay, North Coast, &c.; also Victoria. Fl. Nov.

ORDER LXXX.—*XYRIDACEÆ.*

Perianth inferior, of 3 petaloid inner segments and 3 outer, scarious, much-differentiated segments. Stamens 6, 3 often imperfect. Ovary imperfectly 3-celled. Fruit capsular.

A small, extensively distributed, chiefly tropical, order.

XYRIS.

Inner perianth of 3 petaloid segments, with long slender claws and broad spreading laminæ; outer perianth a thin scarious segment, wrapped round the inner perianth and thrown off by it; 2 bracteoles enclosing the flower and fruit. Stamens 6, 3 inner ones opposite the inner segments and inserted at the base of the lamina, having a short filament and small ovate anther; 3 outer ones with long filaments inserted at the base of the ovary, usually bearing a tuft of hairs or an imperfect anther, sometimes absent. Ovary imperfectly 3-celled, with numerous ovules on basal or partially parietal placentas. Style slender, 3-branched. Fruit a capsule. Flowers crowded, in sub-spherical dense heads, each flower subtended by a cartilaginous bract.

The genus has as wide a range as the order.

Flowers pale yellow. Bracteoles keeled above ... 1. X. *operculata.*
Flowers orange. Bracteoles not keeled ... 2. X. *gracilis.*

1. X. OPERCULATA, *Lab.* A densely-tufted perennial. Leaves crowded on the rootstock with shining sheathing bases, the outer ones without laminæ, or with rather broader laminæ than the inner leaves; inner ones with laminæ usually about $\frac{1}{2}$ line diameter, rather thick, straight or curved, 4-12 inches long, but sometimes 1-$1\frac{1}{2}$ line broad. Flowering-stem slender, usually 1-2 feet long. Flower-head ovoid or globular, $\frac{1}{4}$-$\frac{3}{4}$ inch diameter. Bracts nearly black, broad. Bracteoles rather long and narrow, boat-like, with a prominent ciliated keel in the upper half. Inner perianth pale yellow, with spreading, nearly orbicular, laminæ, about $\frac{1}{2}$-$\frac{3}{4}$ inch diameter. Barren stamens, with a terminal dense tuft of hairs.

Common on wet heaths; also in New South Wales, Victoria, South Australia, and Queensland. Fl. Nov.-Jan.

2. X. GRACILIS, *R. Br.* Similar in habit and detail to *X. operculata*, only smaller. Leaves generally flatter and less rigid. Flower-head $\frac{1}{4}$-$\frac{1}{2}$ inch diameter. Bracts loose or with spreading tips. Bracteoles broader, smooth, and shining, without a keel. Inner perianth deep orange, the laminæ hardly $\frac{1}{4}$ inch broad.

Near Strahan and Zeehan, Circular Head, Hampshire Hills, &c.; also in Queensland, New South Wales, and Victoria. Fl. Nov.-Jan.

Var. *bracteata*. A variable variety or connecting-link between the last two; the habit approaching *X. gracilis*, but the inner perianth and bracteoles often very close to *X. operculata*. Common on wet heaths.

ORDER LXXXI. *JUNCACEÆ.*

Perianth inferior, of 6 free or partially united segments, persistent, usually scarious. Stamens 6, rarely 3, inserted at the base and usually on the perianth. Ovary superior, 3-celled, or 1-celled with 3 basal or parietal placentas. Style simple or 3-branched. Ovules solitary or numerous to each carpel. Fruit a capsule.

A very large order, distributed throughout the world, running without a clear demarkation into *Liliaceæ*.

Stems flat, rigid. Diœcious ... . 1. *Xerotes.*
Leaves grass-like, with few long hairs. Ovules 3 in the ovary ... ... 2. *Luzula.*
Leaves, if flat, glabrous. Ovules several 3. *Juncus.*

1. XEROTES

Flowers diœcious: males with 6 stamens and a rudimentary or no ovary; females with a 3-celled ovary, with 1 ovule in each cell, style 3-lobed nearly to the base, stamens absent or very rudimentary.

A rather large genus, only one species, from New Caledonia, extending beyond Australian distribution.

Leaves and stem 1-2 feet high .. .. 1. X. *longifolia.*
Leaves and stem under 6 inches ... 2. X. *glauca.*

1. X. LONGIFOLIA, *R. Br.* Plant tufted. Leaves mostly at the base, 1-2 feet long and 3-6 lines wide, rather rigid, usually bifid at the apex. Stem flat, 1-2 feet high. Flowers in small clusters along the branches of a rather long irregular panicle. Perianth coriaceous, about 1 line long, more membranous in the females. Capsule globose, 2-2½ lines diameter, indurated, shining.

Very common. It occurs also in Queensland, New South Wales, Victoria, and South Australia. Fl. Nov.

2. X. GLAUCA, *R. Br.* A small tufted plant. Leaves chiefly at the base, about 3 inches long and 1 line wide, curved or straight. Stem flat, 1-2 inches long. Flowers in few, rather dense clusters, in an interrupted spike or panicle. Male perianth coriaceous, under 1 line long, tubular, 6-lobed; female perianth 1½-2 lines long, segments free. Capsule about 2 lines long, marked with obscure transverse striæ.

Common in many localities, principally in the north, near Launceston, Norfolk Plains, Brighton; also in New South Wales, Victoria, South Australia, and Western Australia. Fl. Nov.-Dec.

2. LUZULA

Perianth-segments free, scarious. Stamens 6. Ovary 1-celled, with 3 erect ovules. Style slender, with 3 rather long lobes.

A small genus, with a distribution as wide as the order.

Leaves with a thickened margin ... . 1. *L. oldfieldii.*
Leaves without a plainly thickened margin ... ... 2. *L. campestris.*

1. L. OLDFIELDII, *Hook.* Plant usually in tufts. Leaves mostly at the base of the stem, grass-like, bearing few slender hairs on the margin, 1-6 inches long and 2-4 lines broad, the margin conspicuously thickened. Stem 4-12 inches high, slender, bearing 2 or 3 leaves besides the leafy bracts subtending the inflorescence.

Flowers numerous, in small dense heads, and the heads all collected into a dense globose cluster. Details of the flowers and fruit not differing from *L. campestris*.

On the summits of mountains. Fl. Nov.-Dec.

2. L. CAMPESTRIS, *D. C.* Habit of the last. Leaves 2-4 inches long, usually 1-2 lines broad, copiously hairy on the margin, which is never prominently thickened. Stem slender, 2-12 inches high, with generally 1 leaf besides a single leafy bract subtending the inflorescence. Flowers in small heads, usually on rather long slender stalks, in a terminal, irregular, generally compound panicle; sometimes the heads collected into a dense sub-globose cluster. Perianth-segments brown, 1-$1\frac{1}{2}$ line long, surrounded by short white bracts. Capsule about $1\frac{1}{2}$ line long. Seeds about $\frac{1}{3}$ line long, black, shining.

Very common; also throughout Australia. Distributed throughout temperate regions of both Hemispheres. Fl. Oct.-Nov.

3. JUNCUS.

Perianth of 6 equal, free, scarious segments. Stamens 6, rarely reduced to 3. Ovary 1-celled, with 3 parietal placentas, or imperfectly 3-celled. Ovules numerous. Style divided to about the middle into 3 branches.

A large genus, with a world-wide distribution.

Leaves flat, grass-like.
Perianth about 1 line long.
Leaves 2-3 lines broad. Stamens 3 ... ... 1. *J. planifolius.*
Leaves about 1 line broad. Stamens 6 ... ... 2. *J. cæspititius.*
Perianth 2-3 lines long.
Flowers in a dense terminal head ... ... 3. *J. falcatus.*
Flowers dispersed ... . 4. *J. bufonius.*
Leaves filiform or cylindrical.
Leaves very slender.
Perianth 2-3 lines long. Leaves solid.
Flowers numerous, along the stem. Leaves involute ... ... 4. *J. bufonius.*
Flowers few. Leaves revolute ... ... 5. *J. revolutus.*
Perianth 1 line long. Leaves cylindrical, septate... ... ... 11. *J. capillaceus.*
Leaves rather stout, cylindrical, with distinct septa inside ... ... 10. *J. prismatocarpus.*
Leaves reduced to sheathing bracts.
Perianth pale. Filaments slender.
Stamens 3. Flowers loose or compact ... . . 6. *J. communis.*
Stamens 3 or 6. Flowers loose. Plant robust .. 8. *J. pallidus.*
Stamens 6 Flowers few, loose. Plant slender, densely tufted ... ... 7. *J. pauciflorus.*
Perianth dark brown. Filaments short and broad.
Stamens 6 ... ... 9. *J. maritimus.*

1. J. PLANIFOLIUS, *R. Br.* Leaves mostly at the base, flat, grass-like, 3-9 inches long, 2-4 lines broad. Stem leafless, 3-12 inches high. Flowers few together, in small clusters, terminating much-branched spreading branches, or all compacted in a dense, terminal, sub-globose head; usually subtended by 1 or 2 leafy bracts. Perianth-segments brown, about 1 line long. Stamens 3. Capsule about as long as the perianth.

Very common; also throughout extra-tropical Australia. Fl. Dec.

2. J. CÆSPITITIUS, *E. Mey.* Very close to *J. planifolius*. Leaves flat, grass-like, about 1 line diameter, often convolute, at least when dry. Stems slender,

often grooved or angled, leafless, 3-12 inches high. Inflorescence similar to *J. planifolius*, only the flowers slightly larger. Stamens 6. Capsule rather shorter than the perianth.

Very common in damp pastures; also in Victoria, South Australia, West Australia, and New South Wales. Fl. Dec.

3. J. FALCATUS, *E. Mey.* Tufts arising from a creeping base. Leaves at the base of the stem flat, grass-like, 3 or 4 inches long, about 1 line broad. Stem 6-8 inches high, leafless, or with 1 leaf near the base. Flowers in a dense terminal head, subtended by 1 or 2 bracts, rarely one of the bracts with a head of flowers remote from the terminal head. Perianth-segments acute, dark brown, often with a green centre, about 2 lines long. Stamens 6. Capsule about as long as the perianth.

Common at a considerable altitude on many mountains, and near Campbell Town. It also occurs in Victoria and New South Wales. Fl. Nov.-Dec.

4. J. BUFONIUS, *Linn.* A small tufted plant of variable habit. Leaves on the stems as well as at the base, usually filiform, and 1 to many inches long, sometimes flat, and nearly 1 line broad. Stems numerous, slender, erect or procumbent, 1-12 inches long, much-branched. Flowers solitary or in clusters, in the forks and terminating the branches. Perianth-segments pale, very narrow, about 3 lines long, sometimes less. Stamens 6, rarely 3. Capsule narrow, shorter than the perianth.

Very common in damp places; also in New South Wales, Victoria, South Australia, West Australia, and Queensland. Found in most temperate regions. Fl. spring and summer.

5. J. REVOLUTUS, *R. Br.* A small slender plant, with a creeping base. Leaves few, at the nodes and on the stems, 1-3 inches long, very slender, the midrib prominent, and the margins thickened. Stem slender, erect, bearing few flowers in a small, loose, terminal cyme. Perianth-segments narrow, acute, pale, about 2½ lines long. Stamens 6. Capsule pale, shining, about as long as the perianth. *J. brownii*, F. v. M.

Bridgewater, Port Cygnet, George's Bay, George Town, Circular Head; probably common in salt or brackish swamps; also in Victoria and New South Wales. Fl. Oct.-Nov.

6. J. COMMUNIS, *E. Mey.* Usually densely tufted; rootstock creeping. Leaves reduced to few close sheaths at the base of the stems. Stems erect, cylindrical, slender to rather stout, mostly about 2 feet high. Inflorescence terminal, but appearing lateral by the subtending bract being stem-like and continuing in the line of the stem. Flowers were numerous, in a loose or dense compound panicle. Perianth-segments pale, about 1-1½ line long. Stamens 3. Capsule obtuse, rather longer than the perianth. *J. australis*, Hook. "Fl. Tas."

Very common. It occurs throughout Australia, and has as wide a distribution as the order. Fl. spring and summer.

7. J. PAUCIFLORUS, *R. Br.* A smaller, more slender plant than the last, and not differing in general habit except that it is rather less rigid. Inflorescence very loose. Perianth-segments about 1 line long. Stamens 6. *J. gunnii*, Hook. "Fl. Tas." (included).

Very common; also throughout Eastern and Southern Australia. Fl. Nov.-Jan.

8. J. PALLIDUS, *R. Br.* Similar habit and general structure to *J. communis*, only very robust. Stems usually 4-5 feet high. Inflorescence very loose. Perianth very pale, 1½ line long. Stamens usually 3, but varying up to 6. *J. vaginatus*, Hook. "Fl. Tas."

Common in many parts. Throughout Australia, except the extreme north. Fl. Nov.-Dec.

This and *J. pauciflorus* are doubtfully distinct from *J. communis*.

9. J. MARITIMUS, *Lam.* Very similar in habit to *J. communis*, but rather more rigid, and the leaves extended into cylindrical stem-like laminæ, except the outer ones. Stems 2-3 feet high, the erect bract sometimes very short. Inflorescence dense to very loose. Perianth dark brown, about 1½ line long; outer segments acute, inner ones obtuse. Stamens 6. Filaments short and broad. Capsule about as long as the perianth, dark, shining, and rather acute.

Common in salt marshes. It occurs almost throughout Australia. Common to most temperate localities of the world. Fl. Oct.-Nov.

10. J. PRISMATOCARPUS, *R. Br.* Tufted, on a creeping base. Leaves mostly at the base of the stems, sheathing, the laminæ cylindrical, divided inside by pithy septa. Stems 1-2 feet high, slightly compressed. Inflorescence terminal, but appearing lateral on many stems by the subtending bracts appearing continuous. Flowers clustered in heads, in a rather loose compound panicle. Perianth-segments narrow, acute, about 1⅓ line long. Stamens generally 3. Capsule with prominent acute angles. *J. holoschænus*, R. Br.

Very common in damp situations. Throughout extra-tropical Australia. Fl. Nov.-Dec.

11. J. CAPILLACEUS, *Hook.* A small plant, densely tufted, on a creeping base. Leaves slender, filiform, dispersed on the stems, the bases shortly sheathing, the laminæ cylindrical and septate, except where very small, ½-4 inches long. Stems erect, at least in the upper portion, ½-3 inches high. Flowers few together, in clusters or solitary, terminal, but often 1 or more cluster below the terminal one. Perianth-segments about 1 line long. Stamens usually 6. Capsule with 3 obtuse angles, pointed, usually exceeding the perianth. *J. stipulatus*, Mey.

Longley, Zeehan; common in many wet pastures, but overlooked. It occurs in New South Wales and Victoria, also in New Zealand. Fl. Nov.-Dec.

ORDER LXXXII.—*TYPHACEÆ.*

Flowers unisexual, in dense heads or spikes. Perianth none, but its place taken by numerous hairs or scales surrounding each flower. Male flowers clustered above the female, each consisting of 3 or fewer stamens; female flowers consisting of a simple 1-ovuled carpel, tapering into the style. Fruit a small 1-seeded nut.

The order has but few genera, but is distributed almost throughout the world.

TYPHA.

Flowers in dense cylindrical spikes, the males forming a mass distinct above the females.

The one species found in Tasmania has nearly as wide a distribution as the order.

T. ANGUSTIFOLIA, *Linn.* Stems from a creeping rhizome, erect, often several feet high, cylindrical, ¼-¾ inch diameter. Leaves sheathing, flat, longer or shorter than the stem, ¼-⅓ inch broad. Female spike brown, velvety, 3-12 inches long, ½-1 inch diameter; male spike close above or removed from the female, in a shorter, narrower, spike. *Typha brownii*, Kunth; *T. muelleri*, Rohrb.

Common in water; also throughout Australia. Fl. Dec.

ORDER LXXXIII.—*LEMNACEÆ.*

Small floating or submerged plant, without distinct stem or leaves, expanding into leaf-like fronds, with usually a filiform descending root. Flowers seldom forming, consisting of 1 or 2 stamens and an ovary enclosed in a bract formed on the margin or upper surface, propagation usually by lateral budding. Ovary 1-celled, with usually 1 amphitropous ovule. Fruit a minute utricle.

The order consists of but two genera.

LEMNA.

Flowers formed on the margin. Fronds with a descending root-fibre, at least in the peltate species.

The genus is found throughout the world. The Tasmanian species are cosmopolitan.

Fronds oblong with a slender stalk, dichotomously
dividing, often many times ... ... 1. *L. trisulca.*
Fronds oblong, simple ... ... 2. *L. minor.*

1. L. TRISULCA, *Linn.* Frond oblong, 1-3 lines long, with a slender stalk, often 2 or 3 times as long. Young fronds arising, one on each side of the old one, near the base, not separating from the parent frond, and also bearing young fronds upon maturity; being repeated several times, the plant may extend to several inches. Flower of Tasmanian plant not seen.

Common in still fresh water; also in New South Wales, Victoria, South Australia, and Queensland. Fl. Dec.

> I have always found the Tasmanian plant submerged, and have never found it bearing root fibres. Its general habit also differs from the European form.

2. L. MINOR, *Linn.* Fronds oblong, about 2 lines diameter, each with a descending root-fibre; floating, rapidly budding, so as to cover a considerable surface; the fronds separating when mature.

Very common in still water; also throughout Australia. Fl. Dec.

ORDER LXXXIV. *NAIADEÆ.*

Perianth, when present, of 3-6 inconspicuous scales. Floral structure very varied, hermaphrodite or unisexual. Stamens 6 or fewer, sessile or nearly so. Pistil of 6 or fewer, usually free, carpels, tapering above into the style and bearing 1 ovule, rarely combined. Fruit 1-seeded nuts, or, where the pistil is syncarpous or the carpels many-ovuled, follicular.

> A cosmopolitan order of very varied forms; living principally in water, both salt and fresh, but in some instances also in comparatively dry situations. The included genera are often formed into 2 orders—*Triglochin, Potamogeton*—and a few small genera not represented in Tasmania forming the order *Potameæ* or *Juncaginaceæ.*

i. Fresh water or terrestrial plants, the flowers
numerous in spikes ... ... ii.
Flowers few or solitary, or, if numerous, the
plants are marine ... ... iii.
ii. Carpels usually 3 ... ... 1. *Triglochin.*
Carpels usually 4 ... ... 2. *Potamogeton.*
iii. Flowers few or many together ... ... iv.
Flowers solitary .. .. v.
iv. Flowers few, on an elongating coiled peduncle... 3. *Ruppia.*
Flowers in numerous spikes, on a common stalk 4. *Posidonia.*
Flowers few, on a flat peduncle, buried in the
base of a leaf ... ... 5. *Zostera.*
v. Leaves filiform, about ½ inch ... ... 7. *Lepilæna.*
Leaves spathulate, 1-3 inches ... ... 6. *Cymodocea.*
Leaves oblong, stalked ... ... 8. *Halophila.*

1. TRIGLOCHIN.

Flowers usually hermaphrodite. Perianth of 6 or 3 scales. Stamens usually as many as the perianth-segments, opposite and attached to them. Carpels 6, but 3 are generally abortive. Ovules solitary in each carpel.

The genus is small, but found throughout temperate and sub-tropical regions.

Plant robust. Stem 1-3 feet high. Leaves $\frac{1}{2}$ inch diameter ... ... 3. *T. procera.*
Plant slender. Leaves under 2 lines diameter.
  Flowers numerous, in a spike-like raceme. Flowers and fruit nearly globular ... ... 1. *T. striata.*
  Flowers few or many, in a spreading raceme. Fruit linear... ... ... 2. *T. centrocarpa.*

1. T. STRIATA, *Ruiz. et Par.* Creeping and tufted at the nodes. Leaves at the base of the stem, filiform, except in robust forms, where they are somewhat compressed and 1-$1\frac{1}{2}$ line broad, 1 to about 9 inches long, generally but not always shorter than the stem. Stem erect, simple, slender, 1 inch to nearly 1 foot high, the inflorescence occupying the greater part. Flowers in a spike-like raceme, very numerous. Perianth-segments about $\frac{1}{2}$ line long, the inner ones sometimes absent. Stamens 3 perfect ones within the outer segments, and barren ones within the inner segments when present. Carpels attached to a central axis, the perfect ones discoid with a short recurved style, falling off when ripe, the abortive ones remaining attached to the axis. *T. triandrum*, Hook. "Fl. Tas."

Very common in salt marshes. It occurs throughout Australia, and it is common to the temperate Southern Hemisphere. Fl. Oct.-Jan.

2. T. CENTROCARPA, *Hook.* A very small tufted plant. Leaves at the base of the stem very slender, filiform, $\frac{1}{2}$-1 inch long. Stems slender, solitary or many from the same tuft, generally 1-2 inches high, the inflorescence occupying the other half. Flowers few, in a small raceme, at first close but soon spreading. Perianth-segments minute, spreading, slender; generally only 3, and often but one, with a perfect stamen; rarely 6, and each with a stamen. Carpels linear, exceeding the perianth, with plumose stigmas. Fruiting-carpels linear, about 2 lines long, bearing 2 short spurs at the base. *P. nanum*, F. v. M.

Common in many localities, principally on sandstone or moist sandy places on hills, Bellerive, near George's Bay, &c. It occurs also throughout temperate Australia. Fl. Sept.-Nov.

3. T. PROCERA, *R. Br.* A robust plant, usually living in water. Leaves flat, about $\frac{1}{2}$ inch broad, 1 to many feet long, the upper portion usually floating. Stem erect, single, $\frac{1}{4}$-$\frac{1}{2}$ inch thick, 1 to many feet high. Flowers very numerous, in a rather dense spike-like raceme, 2 inches to 1 foot long. Perianth-segments usually 6, each bearing a perfect stamen, broad, about 1 line long. Carpels about $1\frac{1}{2}$ line long, with a short recurved stigma. Fruit on a stalk about 2 lines long, oblong, but pointed at both ends, all 6 carpels maturing, laterally flattened, 3-ribbed on the back, 3-5 lines long.

Very common in fresh or brackish water; also throughout Australia. Fl. Oct.-Dec.

2. POTAMOGETON.

Flowers hermaphrodite. Perianth of 4 scales. Stamens 4, inserted on the perianth-segments. Carpels 4, free from one another. Ovules solitary in each carpel.

Distribution as wide as the order. All the species are water plants, with some or all of the leaves submerged. Our knowledge of Tasmanian forms is still meagre, and requires careful observation to eliminate error.

Leaves broad, stalked	1. *P. natans.*
Leaves opposite, connate	2. *P. perfoliatus.*
Leaves sessile, ovate, upper ones opposite ...	3. *P. prælongus.*
Leaves linear, obtuse	4. *P. obtusifolius.*
Leaves filiform, acute	5. *P. pectinatus.*

1. P. NATANS, *Linn.* Leaves broad, ovate or oblong, on long stalks, the lower ones submerged, narrower, and usually crisped on the margin; upper ones thick, floating, 1-2 inches long or rarely longer. Flowers in a dense cylindrical spike, about 1 inch long, on a rather short robust stalk. *P. heterophyllus*, Hook. "Fl. Tas." (included).

Common in fresh water; also throughout Australia and most temperate and sub-tropical parts. Fl. Nov.-Dec.

> The Tasmanian forms often somewhat approach *P. heterophyllus*, Schreb. *P. cheesmanii*, Bennett, is also referable here.

2. P. PERFOLIATUS, *Linn.* Stems usually very long, with numerous submerged leaves in opposite pairs, often connate, the upper ones only alternate, broadly ovate, about 1 inch long. Flowers in small, rather dense, spikes, ½-¾ inch long, on lateral and terminal peduncles.

South Esk River. It occurs also in New South Wales, Victoria, and Queensland. Common in the Northern Hemisphere. Fl. Nov-Dec.

3. P. PRÆLONGUS, *Wulf.* Stems elongated. Leaves submerged, alternate, sessile, narrow-oblong, stem-clasping, the upper ones only opposite, 2-4 inches long. Flowers in a short dense spike, ½-1 inch long, on a rather short, thick, terminal stalk.

South Esk River (probably in error): also in Victoria. Common in the Northern Hemisphere. Fl. Nov.-Dec.

> Doubtfully identical with *P. prælongus*, Linn. Mueller considers it a form of *P. polygonifolius*, Pour., but that species has long petioles.

4. P. OBTUSIFOLIUS, *Mert. et Koch.* Stems slender, rather spreading. Leaves all submerged and alternate, except the upper ones, thin, linear, 3-nerved, obtuse, but not conspicuously so, mostly 1½ inch long. Flowers few, in a small spike, on terminal and lateral stalks. *P. gramineus*, Hook. "Fl. Tas.;" *P. pusillus*, Linn.

Jordan River, near Campbell Town, South Esk River. It occurs in New South Wales, Victoria, South Australia and West Australia. Common in the Northern Hemisphere. Fl. Oct.-Nov.

5. P. PECTINATUS, *Linn.* Stems very slender and often much elongated. Leaves very slender, alternate, 2 or 3 inches long, the base usually distinctly sheathing, 1-nerved. Flowers in terminal or lateral interrupted spikes, on short or long stalks. *P. marinus*, Linn.

Bridgewater marshes; also in Victoria and South Australia. Common in the Northern Hemisphere. Fl. Oct.-Dec.

3. RUPPIA.

Flowers hermaphrodite. Perianth none. Stamens of two 2-celled sessile anthers. Pistil of 4 distinct sessile carpels, each bearing a single ovule. Fruit four 1-seeded nuts, each raised on a stalk.

The genus contains but one species, but has a distribution throughout temperate and sub-tropical regions of the globe.

R. MARITIMA, *Linn.* Stems slender, elongated, and much-branched. Leaves all submerged, filiform, mostly alternate, 2 to many inches long, sheathing at the base. Flowers two together or solitary, on a long filiform peduncle formed and coiled in the axil of a leaf; when the flower is mature the peduncle uncoils till the flower reaches the surface, where the pollen is discharged. Subsequent to impregnation the carpels each develop a stalk, often ½-1 inch long.

Very common in brackish water; also throughout Australia. Fl. summer.

4. POSIDONIA.

Flowers hermaphrodite or mostly so. Perianth none. Anthers 3, on a short common filament. Ovary of a single 1-seeded carpel. Fruit with a succulent pericarp.

The genus contains but 3 species, 2 of which are European.

P. AUSTRALIS, *Hook.* Leaves flat, sheathing, clustered round the short stem, 1-3 feet long and about ¼ inch wide. Flowering stems 1-2 feet long, bearing 3 or 4 spikes at a distance from one another, each about 2 inches long. Flowers 6-12 in each spike, each flower subtended by a bract and 2 bracteoles. Stigma 2-4-lobed. Fruit about ¾ inch long.

Near George Town, below low-water mark also in South Australia, West Australia, and Victoria. Fl. Dec.

5. ZOSTERA.

Flowers unisexual, but in the same inflorescence, numerous, sessile, on a flat band-like stem that remains enclosed in a leaf-sheath. Perianth none. Male flowers consisting of a single 1-celled anther. Female flowers of a single carpel, with a bifid slender style. Ovule solitary. Fruit a nut.

A genus of few species, found in most regions in shallow, salt, and brackish water.

Leaf notched at the end ... ... 1. *Z. nana.*
Leaf entire, and rounded at the end ... . 2. *Z. tasmanica.*

1. Z. NANA, *Roth.* Rootstock creeping in the mud, with leafy branches at intervals. Branches sub-erect. Leaves alternate, grass-like, with sheathing-bases, often 1-2 feet long and about 1 line broad, usually with a single, distinct, central nerve, and blunt-ended with a broad notch, but variable. Flowering leaf with a sheath above the leaf-sheath, usually under 1 inch long, but variabl Flower-stem contained in the sheath, the margins rather incurved, and sometimes with a partial membrane over the flowers, but not constant. *Z. marina*, Hook. "Fl. Tas."; *Z. muelleri*, Irm.

Common on the coast; also in Victoria, South Australia, New South Wales, and Queensland. Fl. summer.

> The plant differs from the *Z. nana* of the Northern Hemisphere, but not sufficiently to be considered a distinct species.

2. Z. TASMANICA, *Mart.* Similar in habit to the last, only the leaves rather broader, rounded at the end, or sometimes with a narrow notch, and generally with 3 or 5 parallel veins. Flowering sheath about 1 inch long. *Z. muelleri*, Hook. "Fl. Tas."

Southport, Derwent, and probably common in many parts; also in Victoria and South Australia. Fl. Dec.-Jan.

> The plant is referred to as distinct from the last in most works, but I have been unable to sort out all forms as distinctly one or the other.

6. CYMODOCEA.

Flowers unisexual, each solitary, within a sheathing bract. Perianth none. Male flowers of 2 sessile 2-celled anthers. Female flowers of 2 distinct carpels, each tapering into a slender bilobed style, each bearing 1 ovule. Fruit a small nut.

The genus is small, but has a wide distribution in the Northern Hemisphere.

C. ANTARCTICA, *Endl.* Rootstock creeping, sending off erect leafy stems at intervals. Stems hard, branched, about 6-12 inches high, marked with the scars of fallen leaves. Leaves 1-3 inches long, 3-4 lines broad, truncate at the end, and sheathing at the base, the junction of the lamina with the sheath marked with a transverse line. Flowers hidden in the leaf-axils. *C. zosterifolia*, F. v. M.

In shallow water near George Town and North-West Coast; also in Victoria, West Australia, and South Australia. Fl. summer.

7. LEPILÆNA.

Flowers unisexual, each enclosed in a pair of bracts. Male flowers with a very short 3-lobed perianth, containing 2 or 3 sessile 2-celled anthers. Female flowers with a 3-lobed or segmented perianth and 3 distinct 1-ovuled carpels, tapering into a slender style with a flat stigma. Fruit a small nut.

The genus is confined to Australia.

L. PREISSII, *F. v. M.* Stem very slender. Leaves very slender, but flat, 1-2 inches long, with narrow sheathing bases, except the floral leaves, which have broad sheaths and often short laminæ. In the male plant the floral leaves are in fascicles, bearing 2 or 3 flowers between them; in the females the floral leaves are in pairs, and the flowers shortly stalked. Fruit cylindrical, about 1 line long. *L. cylindrocarpa*, Benth (included): ***Zannichellia preissii***, Lehm *Z. palustris*, Hook. "Fl. Tas" (referring to a rather robust form in an imperfect condition, that may be *L. australis*, J. Drumm.).

In many parts. Campbell Town, &c., in fresh water, but overlooked; also in Victoria, South Australia, and West Australia. Fl. Dec.-Jan.

8. HALOPHILA.

Flowers unisexual, solitary, in a pair of bracts; male with a 3-segmented perianth, and 3 sessile 2-celled anthers: female without a perianth, and an entire, 1-celled, many-ovuled ovary, tapering into a slender style, with an entire or 3-5-lobed stigma. Fruit a capsule.

A genus found chiefly in tropical and sub-tropical shores.

H. OVALIS, *Hook.* Stems creeping. Leaves in pairs, at intervals, their base enclosed in 2 scarious bracts. Laminæ ½-2 inches long, oblong, thin, on a slender stalk. Flowers contained in the leaf-axils, the males stalked, the females sessile.

Bass Straits. Barnes Bay, Bruni Island. Throughout Australia, on the coast, and common to the tropical and sub-tropical coasts of the Indian and Pacific Oceans. Fl. Dec.

ORDER LXXXV.—*ALISMACEÆ.*

Perianth of 6 segments, all similar or in 2 dissimiliar whorls. Stamens 6 to many. Ovary of 3 to many distinct, or nearly distinct, carpels, with 1 to many ovules in each. Fruit capsular.

An order of mud-loving weeds, distributed throughout the world.

DAMASONIUM.

Perianth of 3 outer herbaceous and 3 inner petaloid segments. Stamens 6. Carpels few, usually 2-seeded and coherent by the base to the central axis of the flower.

A small genus, closely allied to ***Alisma***, appearing throughout Europe, in California, and a solitary species in Australia.

D. AUSTRALE, *Sal.* A small tufted annual. Leaves radical, ovate-lanceolate, long-stalked, 1-2 inches. Stem 6 inches to 1 foot high, vaguely branched, each branch terminating in a single flower. Perianth minute. Carpels 5-10, 2-3 lines long.

Bellerive, South-East Coast; also throughout Australia. Common to the tropical and sub-tropical coasts of the Indian and Pacific Oceans. Fl. Dec.

ORDER LXXXVI.—*CENTROLEPIDEÆ.*

Perianth none, but each flower surrounded by 1-3 thin irregular scales. Flowers solitary, or many, enclosed in 2 bracts. Stamen solitary. Filament slender. Anther 1-celled. Ovary either simple, 1-3-celled, or the carpels very distinct, though united and placed one above the other, often many in a single or double spiral. Ovules 1 to each carpel. Styles partially combined. Fruiting carpel not essentially altering from the fruiting form.

An order of small sedge-like plants, chiefly Australian, and entirely confined to the Southern Hemisphere. Continuous through *Gaimardia* with *Restiaceæ*, and often included in that order.

Flowers in a capitate head, surrounded by an involucre of bracts	1. *Trithuria.*
Flowers in a flat spike, with 2 opposite rows of equal, or nearly equal, bracts	2. *Aphelia.*
Flowers few or numerous, in an irregular double head, each head subtended by a bract	3. *Centrolepis.*
Similar, and leaves tipped with a slender hair ...	4. *Gaimardia.*

1. TRITHURIA.

Flowers sessile, in a terminal head, surrounded by an involucre of bracts, without subtending scales. Ovary 3-angled or flat, 1-celled, with 1 ovule. Styles 3 or 2, slender, united at the base.

The genus contains but 3 species, and is confined to Southern Australia and Tasmania.

Filaments and stigmas very short	1. *T. submersa.*
Filaments and stigmas long	2. *T. filamentosa.*

1. T. SUBMERSA, *H.* Leaves in a radical tuft, very slender, hardly 1 inch long. Flowering stem slender, about the same length. Bracts generally 6 or 7, lanceolate, about 1 line. Stamens nearly as long as the bracts, inserted at the base of the carpels. Ovary shorter than the stamens, generally about ¼ line long.

In wet situations, Macquarie Harbour, South Esk River, Western mountains; also extra-tropical Australia. Fl. Dec.

2. T. FILAMENTOSA, *Rod.* Close to and similar in habit to *T. submersa*. Inflorescence rather larger. Bracts 2-5, erect, and enclosing the flowers, 2-2½ lines long. Stamens usually 2, and confined to flowers that bear but few carpels. Filaments filiform, 5-6 lines long. Anther linear, obtuse, nearly 1 line long. Carpels stipitate, nearly round, the three angles obtuse; stigmatic branches 5-6 to each carpel, 2-3 lines long, filiform. Fruiting carpels slightly indurated.

Head of Broad River, Mount Field. Fl. Dec.

2. APHELIA.

Bracts herbaceous, in 2 opposite rows, each containing a solitary sessile flower. Scales 1 or 2. Pistil of a single 1-ovuled carpel.

The genus contains about 6 species, and is confined to the temperate portion of Australia.

Spike turned to one side. Bracts 10 or under ...	1. *A. gracilis.*
Spike erect. Bracts 12 or more	2. *A. pumilio.*

1. A. GRACILIS, *Sond.* Leaves and flowering stem $\frac{1}{2}$-1 inch long. Spike ovate, turned to one side, about 2 lines long; lowest bract containing a stamen surrounded by a single scale or sometimes 2 such flowers; the other bracts 5-9, each containing a single ovary, without stamens, and with very rudimentary or no scales. All the bracts are ovate, convex, and somewhat hirsute. A. *gunnii*. Hook.

Formosa, South Esk River; also in Victoria, South Australia, and New South Wales. Fl. Nov.

2. A. PUMILIO, *F. v. M.* About the same size as the last. Spike ovate, erect, about 2-3 lines long; 1 or 2 lowest bracts containing 2 male flowers each, subtended by a scale; the other bracts, 10-16, each containing a single ovary, subtended by a broad scarious scale. All the bracts narrow, and flattened longitudinally, somewhat hirsute.

Cheshunt; also in Victoria, South Australia, and New South Wales. Fl. Nov.

3. CENTROLEPIS.

Flowers generally numerous, rarely solitary, each surrounded by 1, 2, or 3 scarious, unequal, and irregular scales, rarely absent, enclosed by 2 herbaceous bracts. Ovary of 3 to many carpels, rarely only 1, placed above one another in 1 or 2 spiral lines. Style free or slightly joined at the base.

Excepting a species from South China, the genus is confined to Australia.

i.	Bracts greatly exceeding the flowers	ii.
	Bracts not twice as long as flowers ...	iii.
	Bracts hardly exceeding flowers	iv.
ii.	Bracts gradually tapering, slender, curved	1. *C. polygyna.*
	Bracts abruptly contracted, linear, erect .	6. *C. aristata.*
iii.	Head very small, narrow, and slender. Stalk exceeding leaves ...	2. *C. glabra.*
	Head small and narrow. Stalk shorter than leaves	3. *C. muscoides.*
	Head narrow, bracts obtuse, 2-3 lines long. Stalk short ...	4. *C. monogyna.*
	Head fairly broad, on a long stalk ..	7. *C. fascicularis.*
iv.	Bracts small, spreading. Flowers 1-3 in each bract	5. *C. pulvinata.*
	Bracts erect, broad, hairy. Flowers very numerous	8. *C. strigosa.*

1. C. POLYGYNA, *Hieron.* Very small and tufted. Leaves slender, filiform but rigid, $\frac{1}{4}$ inch. Flowering stems generally about $\frac{1}{2}$-1 inch long. Bracts close together, glabrous, narrow, rigid, erect, the lower one tapering into a slender point, 3-4 lines long, the upper one shorter. Flower solitary, or rarely 2, with a single scale. Carpels usually from 10-20. *Alepyrum polygynum.* Hook.

Near George Town, near George's Bay; also extra-tropical Australia.

2. C. GLABRA, *Hieron.* A small plant, in dense tufts. Leaves thread-like, $\frac{1}{2}$-1 inch long. Flowering stems generally shorter than the leaves. Bracts close together, glabrous, narrow, erect; the lower one acutely pointed, $1\frac{1}{2}$-2 lines long; upper bract shorter and less acute. Flowers usually 4, without scales. Carpels about 8. *Alepyrum muelleri.* Hook.

Bottom of a lagoon on Macquarie River; also in Victoria, West Australia, South Australia, and New South Wales.

3. C. MUSCOIDES, *Hieron.* Similar to the last in habit, only smaller, forming small moss-like tufts. Leaves about 2-3 lines long, filiform, but with sheathing bases. Flowering stem very short. Bracts close together, narrow, acute 2-3

lines long. Flowers about 4, with a single scale, sometimes absent. Carpels varying from 4-10. *Alepyrum muscoides*, Hook.

Marshy sub-alpine ground, near Marlborough, Mount Field Range, Great Lake.

4. C. MONOGYNA, *Benth.* Plant densely tufted, forming cushion-like masses, often several inches broad. Leaves ¼-⅓ inch long, slender, with a sheathing base. Flowering stem usually shorter than the leaves, but sometimes much exceeding them. Bracts glabrous, very narrow, erect, and close together, but inserted about ½ line from one another, about 2 lines long. Flowers 1 in each bract, with 1 scale. Pistil composed of a single carpel. *Alepyrum monogynum*, Hook.

Lake St. Clair, Marlborough, Mount Dundas, between Zeehan and Little Henty River. On many mountains 2000 to 3000 feet.

5. C. PULVINATA, *Desv.* Very small and densely tufted. Leaves slender, filiform. ½-¾ inch long. Flowering stem about as long as the leaves. Bracts glabrous or slightly hairy, narrow-ovate. about 1 line long, inserted a little distance from one another, spreading. Flowers 2 or 3 in each bract. Scales 2 or 3 to each flower. Carpels 3-6.

Kent Group, Bass Straits.

6. C. ARISTATA, *Rœm. et Schult.* A very variable plant, more robust and less tufted than the other forms. Leaves ½-1½ inch long, slender, from filiform to ½ line broad. Flowering stem about as long as and similar in breadth to the leaves. Bracts close together, glabrous, erect, in the typical form broad at the base, but prolonged upwards in a flat leaf-like awn, that of the outer bract generally about ½ inch long, sometimes nearly 2 inches long, inner one shorter. Flowers generally about 10-15 in each bract, sometimes reduced to 2 or 3. Scales usually 2, sometimes 3, to each flower. Carpels varying from 3-7.

Common, chiefly in sandy pastures: also in Victoria, South Australia, West Australia, and New South Wales.

> A small form, with fine leaves and very narrow bracts with subulate points, and bearing only 2 or 3 flowers, has been referred to as a variety (var. *pygmæa*, F. v. M.). On Knocklofty, Hobart, this form grows with the robust plant, together with every intermediate gradation.

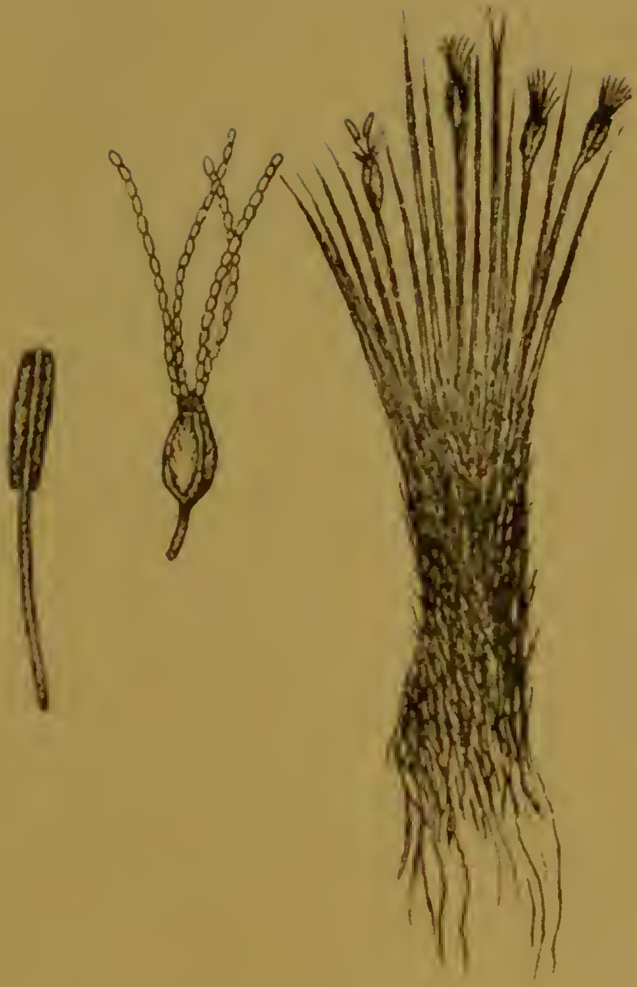
7. C. FASCICULARIS, *Lab.* A densely-tufted plant. Leaves filiform, glabrous, except few rather long hairs on the lower portion. ½-1½ inch long. Flower-stem similar in character to the leaves, about 1-2 inches long. Bracts ovate, erect, covered with rather coarse hairs, about 1½ line long, extended above into a slender awn as long as itself. Flowers 4-8 to each bract, usually 1 rather large scale only to each flower, but sometimes also a smaller one. Carpels 2-4.

In wet, sandy heaths, near Zeehan, Longley, George's Bay, &c.; also in New South Wales, Victoria, and South Australia.

8. C. STRIGOSA, *Rœm. et Schult.* Habit of the last, only the leaves and flowering stems hairy and the flowers more numerous, causing the head to be thicker. Leaves filiform, ½-1 inch long, lightly covered with short thick hairs. Flowering stem usually longer than the leaves, occasionally 2-3 inches, bearing few hairs. Bracts ovate, about 2 lines long, the pointed apex often very short, covered, except the narrow point, with hairs, inserted close together, spreading. Flowers from 4-12 to each bract, each bearing 3, rarely 2, unequal scales. Carpels usually 4-6.

Very common in wet, sandy places, growing with the last, and often taken for it. It occurs also throughout temperate Australia.

> CENTROLEPIS TENUIOR, *R. et Sch.*, is less robust than the type, and is the commoner form found in Tasmania. It is too closely connected to warrant its maintenance as distinct.



TRITHURIA FILAMENTOSA *Rod.*

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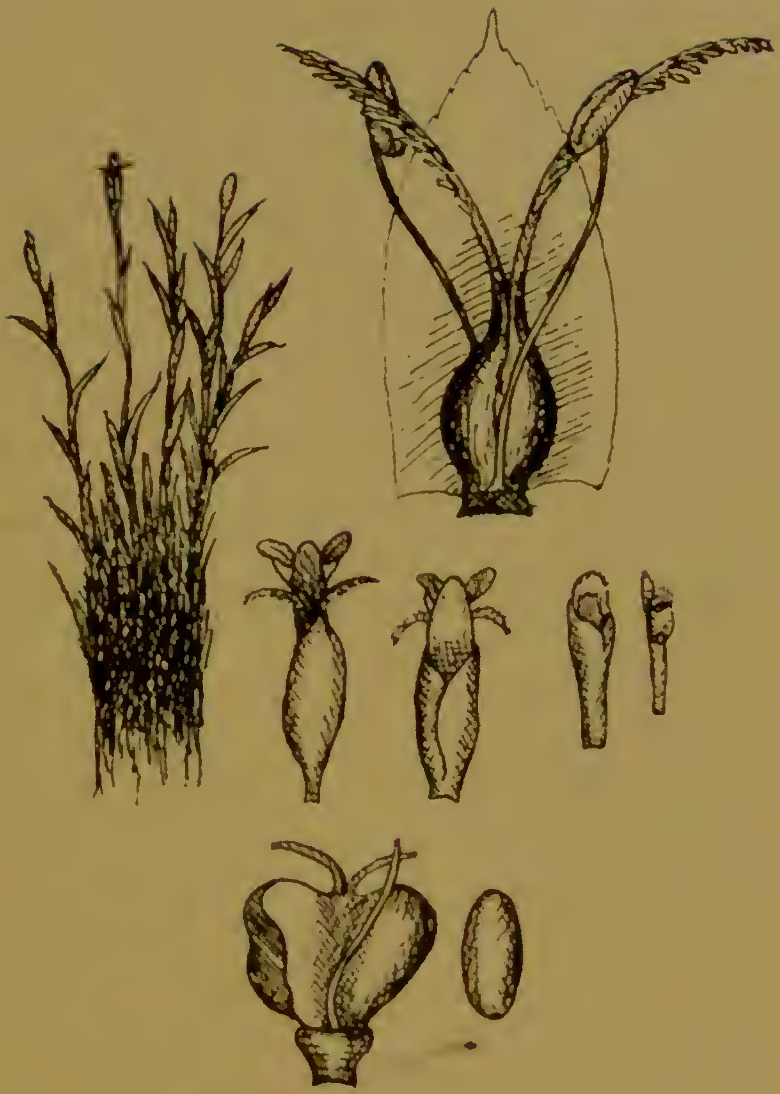

GAIMARDIA FITZGERALDI. *F. v. M. et Rod.*

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4. GAIMARDIA.

Flower solitary in the lower bract, the upper with a rudiment only. Carpels 2, united along the median line, each 1-seeded. Fruit a capsule. Very close to *Centrolepis*, differing in the pistil, which is similar to the form found in *Restiaceæ*.

A small genus, spreading from New Zealand to South America.

G. FITZGERALDI, *F. v. M. et Rod.* Small, in densely-matted cushions, 2 inches to 2 feet diameter. Leaves filiform, tipped with a fine hair. Scape ½ inch long, slender. Lower floral bract glabrous, about 1 line long, with an obtuse or toothed apex, upper bract rudimentary. Scales none. Stamens 2, alternating with the carpels.

Adamson Peak, and in places along the range from Hartz to La Perouse, Mount Geikie, and other mountains of the West Coast

ORDER LXXXVII.—*RESTIACEÆ*.

Flowers nearly always unisexual, in spikelets, each flower contained in 1 or more scarious bracts or glumes. Perianth more or less obscure, of 6, or fewer, generally unequal, scarious, glume-like segments. Male flowers of 3 stamens, very seldom with the rudiment of an ovary. Female flower with a single 1-3-celled ovary, with 1 pendulous ovule in each cell; sometimes rudimentary stamens or staminodia are present. Styles slender, as many as the cells. Fruit a hardened capsule, where more than 1-celled splitting along the angles. Leafless.

The order is intermediate in habit between the rushes and sedges, and can be always distinguished from the latter by the sheathing bracts having their edges free and not combined to form a tube. It is almost confined to the Southern Hemisphere, but has a very wide range.

Surface of stems minutely rough ... ... 1. *Lepyrodia*.
Surface of stems smooth.
  Spikelets all similar.
    Spikelets relatively large, mostly terminal .. 4. *Restio*.
    Spikelets relatively small, sessile, often lateral .. 2. *Hypolæna*.
  Spikelets dissimilar and on different plants. Bracts dark-brown.
    Fruit splitting when ripe .. ... 3. *Leptocarpus*.
    Fruit not bursting ... .. 2. *Hypolæna*.

1. LEPYRODIA.

Perianth-segments 6, nearly equal. Ovary 3-angled, 3-celled. Flowers diœcious, in small heads, often forming interrupted spike-like panicles. Spikelets usually few-flowered, the glumes not closely imbricating or enclosing the perianth.

The genus is confined to temperate Australian distribution.

Stems simple. Flowers in a simple, interrupted, compound, spike-like panicle .. .. 1. *L. muelleri*.
Stems repeatedly branched. Flowers in small clusters, in a much-branched inflorescence ... 2. *L. tasmanica*.

1. L. MUELLERI, *Benth.* Stems simple and erect, from a creeping rootstock, generally 1⅓-2 feet high, the surface very finely nodulated; with a few closely appressed bracts at intervals, about ⅓ inch long, and mostly with a subulate lamina about 2 lines long. Flowers in small clusters, along the upper portion of the stem, often distant from one another, and each cluster with a loose bract at

its base. Flowers shortly stalked. Perianth-segments about $1\frac{1}{2}$ line long, narrow, acute.

Muddy Plains, George's Bay, Swanport, Evandale, Circular Head, &c.; also in Victoria, South Australia, and New South Wales.

2. L. tasmanica, *Hook.* Stems from a creeping rootstock, erect, but slender and much divided, 1-2 feet long in open situations, many feet long among undergrowth and in scrub; the surface rather coarsely nodulated; with a few closely appressed or rather loose bracts at intervals, about $\frac{1}{2}$-$\frac{3}{4}$ inch long, generally with a short subulate lamina. Flowers in small, generally few-flowered, clusters, at intervals towards the ends of the branches, each cluster with a loose bract at its base. Perianth-segments narrow, acute, about 1 line long, except the outer segments of the male flowers, which are much shorter. *L. paniculata*, F. v. M.

Common in wet heaths. It occurs also in Victoria.

> The elongated form, with few flowers in the clusters, is often referred to as var. *laxa*. In the field it is not separable from the type.

2. HYPOLÆNA.

Perianth-segments 6, rarely 4, equal, or rarely the outer ones shorter. Ovary 1-celled, with 1 pendulous ovule. Flowers diœcious; the males usually in spikelets, many-flowered, with over-lapping glumes; females solitary.

A small genus, spreading from South Africa to New Zealand.

Spikelets solitary, about 2 lines long.
  Spikelets terminal, 1-flowered ... ... 1. *H. longissima.*
  Spikelets sessile, at intervals along the branches ... 2. *H. lateriflora.*
Spikelets racemed or panicled, or if solitary, 3-4 lines long ... ... 3. *H. fastigiata.*

1. H. longissima, *Benth.* Stems much divided, slender, wiry, tangled, and climbing among the shrub. Sheaths closely appressed, $\frac{1}{4}$-$\frac{1}{2}$ inch long, with a narrow, flat, spreading lamina, 2-4 lines long, that soon falls. Male spikelets few, lateral, 1-flowered, surrounded by 2 very short glumes; perianth about $1\frac{1}{2}$ line long, the outer segments much shorter than the inner ones. Female spikelets narrow, solitary, terminal, 1-flowered, perianth of 6 or 4 equal segments, about 2 lines long. Nut about 1 line long. *Calorophus elongatus*, Lab.; *Calostrophus elongatus*, F. v. M.

Mount Wellington, Henty River to Mount Dundas, Mount La Perouse, Arthur River, Circular Head, &c.

2. H. lateriflora, *Benth.* Stems slender and much-branched, generally flexuose, especially when short, from a few inches to many feet long. Sheaths closely appressed, mostly $\frac{1}{4}$ inch long, with a persistent, recurved, spreading or erect, slender point, about 2 lines long, a tuft of woolly hairs generally at the orifice. Spikelets all sessile, solitary or 2 together, in the distant bracts. Males about 2 lines long; perianth about 2 lines long, segments all equal. Females narrow, about 2-3 lines long; perianth of 4-6 narrow, nearly equal, segments, the innermost longest. Nut nearly globular, about $\frac{1}{2}$-$\frac{3}{4}$ line diameter. *Calorophus elongatus*, Hook. "Fl. Tas."; *Calostrophus lateriflorus*, F. v. M.

Very common in wet heaths and on mountain-tops. It occurs also in Queensland, New South Wales, and Victoria. It extends also to New Zealand.

3. H. fastigiata, *R. Br.* Stems erect or sub-erect, much-branched, 6 inches to $1\frac{1}{2}$ foot high, obscurely striate, pale. Sheathing scales dark brown, closely appressed, $\frac{1}{4}$-$\frac{1}{2}$ inch long, with a spreading or, more often, erect point. Male spikelets numerous, in a terminal, nodding, loose panicle, each about 2-3 lines

long; flowers numerous: perianth of 6 unequal segments, the two outer ones folded and keeled; next one flat, lanceolate, and acute; the inner 3 shorter and obtuse. Female spikelets few, in a terminal raceme, or solitary, 3-4 lines long; perianth of 6 equal segments. Nuts ovate, about 2 lines long. *Calostrophus fastigiatus*, F. v. M.

Common on many wet heaths: also in New South Wales, Victoria, South Australia, and Queensland.

3. LEPTOCARPUS.

Perianth-segments 6 or fewer, unequal. Ovary 1-celled, with 1 pendulous ovule. Flowers diœcious; the males small, within imbricating glumes, in many-flowered spikelets; females usually in few-flowered erect spikelets, with numerous outer empty glumes. Fruit splitting when ripe.

A small genus, widely spread in the Southern Hemisphere.

Male spikelets 1-2 lines long; female erect, free, ½ inch long ... ... 1. *L. tenax.*
Male spikelets narrow, ½ inch long: females massed together in clusters, each 2-3 lines long... 2. *L. brownii.*

1. L. TENAX. *R. Br.* Stems very numerous, from a creeping base, slender, 2-3 feet high, simple, with closely-appressed bracts at intervals, about ½ inch long. Male spikelets very numerous, in a loose, drooping, compound panicle; spikelets oblong, about 2 lines long, outer glumes empty: perianth-segments about ½ line long, the outer pair folded and slightly keeled. Female spikelets few or many, in an erect, rather dense, panicle, the lowest branches often distant: spikelets stalked, about ½ inch long, many outer empty glumes: perianth-segments about 1½-2 lines long, linear, the outer pair folded and acutely keeled above or throughout.

Very common, principally on damp heaths; also in New South Wales, Victoria, South Australia, and West Australia.

2. L. BROWNII. *Hook.* Stems few or many from a creeping base, slender, simple, 1-3 feet high, with closely-appressed bracts at intervals, about ¼ inch long. Male spikelets linear, oblong, about ¼ inch long, few, in a drooping panicle: flowers in most of the glumes: perianth hardly 1 line long, the segments linear, the outer pair folded, rather longer and acuter than the inner ones. Female spikelets numerous, sessile, compacted in clusters, and forming together a rather dense thyrsoid panicle: spikelets few-flowered, each surrounded by 2 or 3 barren glumes: perianth-segments unequal, glume-like, and closely overlapping, the innermost smallest. *L. simplex*, R. Br. (in error).

Very common in marshy places, also occasionally on sandhills. It occurs also in Victoria, South Australia, and New South Wales.

4. RESTIO.

Perianth of 4-6 unequal segments. Ovary 2 or 3-celled, with 1 pendulous ovule in each. Flowers diœcious, numerous, in spikelets, each flower contained in an imbricating bract, the spikelets not conspicuously differing with sex. Fruit 2-celled and flat, or 3-celled and 3-angled, splitting along the margins or angles.

A large genus, confined to South Africa and Australia.

Barren stems much divided into ultimately filiform branches ... 5. *R. tetraphyllus.*
Stems somewhat flat 4. *R. complanatus.*
Stems cylindrical, undivided.
Bracts blunt, dark brown 1. *R. oligocephalus.*

Bracts acute, pale.
  Bracts subtending the spikelets large and loose ... 2. *R. australis.*
  Subtending bracts becoming small, closely adpressed... ... ... 3. *R. gracilis.*

1. R. OLIGOCEPHALUS, *F. v. M.* Stems erect from a creeping rhizome, simple at least below the inflorescence, 6 inches to 1 foot high. Bracts sheathing but loose, with a truncated, usually woolly, apex, smooth, ½-¾ inch. Spikelets usually few, in an interrupted spike, or rarely a panicle, sometimes solitary. Male spikelets ¼-½ inch long, narrow-oblong, the glumes with a woolly tip when young; perianth flat, about 2 lines long; the outer side segments folded narrowly, keeled, and woolly towards the apex. Female spikelets broadly oblong to spherical, ¼ inch long; perianth 1½ line long; side segments folded, but not keeled. Ovary about 1 line long, with very short curved styles, flat. Staminodia seldom present. *R. monocephalus.* R. Br.

Common on damp heaths in numerous localities.

The plant is very variable, and the form I here treat as var. *glabrum* would be worthy of specific rank were it not for the intermediate form.

Var. INTERMEDIUS. Similar to the type, only the female as well as the male spikelets are narrow-oblong, and the styles are about as long as the ovary, 1-2 feet high. Kingston, Longley.

Var. GLABRUM. Similar in general details to the type, but without the woolly tips to the bracts, glumes, or perianth-segments, seldom exceeding 6 inches, and fairly consistently bearing but 1 spikelet. Bracts sheathing at the base, but loose and spreading, striate, ½-¾ inch long, the apex 3-lobed, the central one 1-3 lines long and subulate, side ones shorter and membranous. Spikelets the same size as in the type, but both sexes narrow-oblong. Male perianth about 1 line long, flat. Female perianth about 1 line long, the outer segments slightly flattened. Ovary ½-⅓ line long. Styles slender, much exceeding it Staminodia always present. Near Kingston.

2. R. AUSTRALIS, *R. Br.* Stems simple, erect, from a creeping rootstock, 1-2 feet high, rather robust. Bracts closely sheathing at the base, loose above, obtuse, about 1 inch long. Spikelets similar in both sexes, broadly to narrowly oblong, about ¼ inch long, mostly on short slender stalks, forming a spike-like interrupted panicle. Glumes lanceolate, with slender spreading points. Perianth in both sexes flat, about 2 lines long, the side pair of segments folded. Ovary 2-celled.

Common in wet heaths and on mountain-tops; also in New South Wales and Victoria.

3. R. GRACILIS, *R. Br.* Very close to *R. australis.* Stems 2-3 feet high. Bracts closely appressed. Spikelets similar, narrow-oblong, rather numerous, in an interrupted, spreading, branched panicle. Glumes lanceolate, with slender spreading points. Flowers as in *R. australis.*

Recherche, Anson Marsh, near George's Bay; also in Queensland, New South Wales, and Victoria.

4. R. COMPLANATUS, *R. Br.* Stems tufted, with fibrous roots, erect, simple, flattened, a few inches to 3 feet high. Bracts pale, closely appressed, ¾-1 inch long. Spikelets on slender stalks, in a loose, interrupted, compound panicle. Male spikelets oblong, 2-3 lines long; glumes ovate, with slender spreading points; perianth-segments 4, linear, about 1 line long; stamens 2. Female spikelets fewer, longer, and narrower than the males, the slender points of the glumes not spreading; perianth-segments 4, rather unequal, glume-like, and imbricated. Ovary 2-celled.

Kingston, Longley, Huon, Circular Head, George Town, and many other localities, on wet heaths; also in Queensland, New South Wales, Victoria, and South Australia.

5. R. TETRAPHYLLUS, *Lab.* Stems erect, from a thickened rootstock, 2-8 feet high. Sheathing bracts closely appressed, about 1 inch long. Lower bracts empty; middle bracts bearing numerous long, much-divided, filiform, barren branches, gradually passing into the branches of the inflorescence. Spikelets numerous, in a narrow, loose, interrupted, compound panicle. Males nearly globose, about 2 lines diameter; glumes ovate, with a slender spreading point; perianth under 1 line long, segments 6 (the side pair folded). Female spikelets broadly oblong, 3-6 lines long; glumes very broad, with a slender spreading point; perianth about 1 line long, flat, segments 4 (the side ones folded). Ovary 2-celled.

Huon, Florentine Valley, West Coast, and numerous marshy localities; also in Queensland, New South Wales, Victoria, and South Australia.

ORDER LXXXVIII. *CYPERACEÆ.*

Flowers numerous to solitary, in spikelets, hermaphrodite or unisexual, each enclosed in a glume, and often a few empty glumes at the base of the spikelet. Perianth reduced to variously-shaped bristles or scales, termed hypogynous scales, or absent. Stamens generally 3, but varying from 1-6. Ovary 1-celled, with 1 erect ovule. Style filiform, deeply 2 or 3-lobed. Fruit a nut. Leafless or leafy, the sheaths of the stem-leaves or sheathing bracts usually combined into a tube, rarely open and with a ligule at the orifice.

A very large order, found throughout the world.

i. Flowers strictly unisexual, pistil in a flask-shaped utricle ... ... ii.
Flowers hermaphrodite or mostly so, without an utricular development ... ... iii.
ii. Fruit armed with a protruding hooked spine ... 14. *Uncinia.*
Fruit a simple flask-shaped utricle ... .. 15. *Carex.*
iii. Spikelets very numerous, in a rather dense to very loose, much-branched, terminal inflorescence, surrounded by an involucre of leaf-like bracts ... ... 1. *Cyperus.*
Inflorescence not so constructed .. . . iv.
iv. Fertile flowers many in the spikelet . v.
Fertile flowers seldom more than one vii.
v. Glumes roughly in two opposite rows ... ... 2. *Schœnus.*
Glumes imbricate all round the rhachis... ... vi.
vi. Spikelet terminal and continuous with the stem 6. *Heleocharis.*
Spikelets very numerous, in a dense, lateral, spherical head ... . 8. *Chorizandra.*
Spikelets few or solitary, and, if numerous, in a dense spherical, terminal head ... ... 7. *Scirpus.*
vii. Spikelets numerous, in a dense, spherical, terminal head ... ... 4. *Mesomelæna*
Spikelets otherwise disposed ... . viii.
viii. Hypogynous scales long and feathery ... ... 5. *Carpha.*
Scales smaller than the nut or none ... ... ix.
ix Leaves similar to the scapes ... ... x.
Leaves dissimilar to the scapes ... . xiii.
x No hypogynous bristles at base of nut ... ... xi.
Hypogynous bristles present ... ... xii.

xi. Spikelets 1-2, about 2 lines long, on the ends of slender filiform scapes ... ... 3. *Elynanthus.*
Spikelets 3-many, sessile, at the end of a stiff erect scape . ... 11. *Cladium.*
xii. Scape branched. Spikelets vaguely distributed 13. *Caustis.*
Scape simple. Spikelets single or more, often in a terminal dense or loose much-branched panicle ... ... 10. *Lepidosperma.*
Spikelet single. Glumes in opposite rows ... 2. *Schœnus.*
xiii. Small, alpine, 1-3 inches. Leaves flat, stiff, erect... 9. *Oreobolus.*
Leaves long, or, if small, not stiff-erect .. ... xiv.
xiv. Inner flowering glume the largest ... ... 11. *Claudium.*
Flowering glume smaller than the intermediate glumes ... ... 12. *Gahnia.*

1. CYPERUS.

Spikelets usually many-flowered. Glumes distichous. Rhachis regularly flexuose. No hypogynous scales. Stamens 3 or fewer. Style continuous with the ovary, but not thickened at the base, deciduous. Spikelets in clusters, in compound umbels, surrounded by an involucre of leafy bracts.

A very large genus, found almost throughout the world, but most abundant in warm climates.

Spikelets in rather loose spreading spikes ... .. 1. *C. lucidus.*
Spikelets in rather dense globular leads ... ... 2. *C. gunnii.*

1. C. LUCIDUS, *R. Br.* Stems erect, tufted from a persistent base, stout, prominently 3-angled, 1-4 feet high. Leaves flat, shorter or longer than the stem, about ½ inch broad. Leafy bracts usually 4 or more, unequal, 6 inches to 2 feet long, similar to the basal leaves. Spikelets in linear spikes, the spikes clustered at the ends of terete branches, unequal, and often 4-6 inches long, the whole appearing as an irregular compound umbel. Spikelets linear, flattened, about ½ inch long, usually 5 or 6-flowered. Glumes slightly keeled, rather acute in most Tasmanian forms. *C. sanguineo-fuscus*, H.

Common in marshy places: also in New South Wales, Victoria, Queensland, and South Australia.

2. C. GUNNII, *Hook.* A smaller plant than the last, and doubtfully distinct. Stems, leaves, and bracts more slender, and generally shorter. Spikelets about ¼ inch long, and condensed into globose heads on rather short branches.

Near Launceston, Glenora &c.: also Queensland, New South Wales, Victoria, and South Australia.

2. SCHŒNUS.

Spikelets few-flowered, generally 2 or 3. Glumes distichous, generally a few empty ones at the base of the spikelet. Rhachis short and straight between the empty glumes, longer and flexuose where bearing flowers. Hypogynus bristles generally slender and 6, rarely absent. Stamens from 1-6. Style slender, rarely thickened just above the ovary, deciduous. Spikelets variously arranged, often solitary, sometimes in heads, but never in compound umbels, as in *Cyperus.*

A widely-distributed genus, but chiefly Australian

i. Spikelets in a long loose panicle ... ... 2. *S. brevifolius.*
Spikelets many, in a small terminal head ... ii.
Spikelets solitary or few ... ... iii.
ii. Head dense ... ... 1. *S. turbinatus.*
Head loose ... ... 5. *S. brownii.*
iii Spikelets solitary, axillary ... ... 6. *S. axillaris.*
Spikelets terminal... ... ... iv.

iv. Spikelet 2 lines long, oblong ... ... 7. *S. nitens.*
Spikelets 4-5 lines, linear... ... ... v.
v. Land plant, erect ... ... 4. *S. tenuissimus.*
Water plant, diffused ... ... 3. *S. fluitans.*

1. S. TURBINATUS, *Benth.* Plant tufted, stems many, erect, simple terete or more or less angled, 6 inches to 1 foot high. Leaves at the base of the stems filiform, 2-3 inches long. Spikelets numerous, in a small, dense, oblong head, about ½ inch long, subtended by about 3 slender bracts often 2-3 inches long. Spikelets about 3 lines long, 1-flowered, with a few empty glumes below and above the flower. Hypogynous bristles 6, longer than the nut. Stamens 3. Nut obovoid, prominently 3-ribbed.

Lagoons near George's Bay Heads, Remine; also in New South Wales.

2. S. BREVIFOLIUS, *R. Br.* Base creeping underground. Stems erect, simple, terete or slightly flattened, 2-3 feet high. Leaves reduced to scales at the base of the stems. Spikelets in a long, narrow, interrupted, compound panicle, narrow-lanceolate, 4-5 lines long, 3-5-flowered, with 2 or 3 empty glumes below and above the flowers. Hypogynous bristles none. Stamens 3. Nut obovoid.

Lagoons at George's Bay Heads: also throughout extra-tropical Australia and New Zealand.

3. S. FLUITANS, *Hook.* A slender, spreading, much-branched water or mud plant; branches slender. Leaves slender, filiform, mostly 2 or 3 inches long, solitary at intervals or tufted at nodes. Spikelets usually solitary at the ends of the branches, linear, 4 or 5 lines long, contained in 2 more or less glume-like bracts, 2-4 flowers, with only one or no empty glumes. Hypogynous bristles none. Stamens 3. Nut ovoid, prominently 3-ribbed.

St. Marys, Constable's Creek, George's Bay, South Esk River, Southport, Mount Field, Western Tiers, &c.

4. S. TENUISSIMUS, *Benth.* Stems numerous, from a creeping rhizome, slender, simple, erect, 2-18 inches high. Leaves reduced to basal scales. Spikelet solitary, terminal, narrow-lanceolate, 3-5 lines long, but variable beyond these limits, subtended by a glume-like bract, 1-flowered, with a few empty glumes above and below it. Hypogynous scales 6, short, broad, and rather thick. Stamens 3. Nut broadly obovoid, smooth, black. *Chætospora tenuissima*, Hook.

Common on damp heaths, especially in the south; also in New South Wales and Victoria.

5. S. BROWNII, *Hook.* Stems tufted, slender, weak, 2-18 inches high, branched. Leaves few, filiform, 2-6 inches long, mostly at the base of the stems. Spikelets pedicelled or nearly sessile, in few-flowered terminal and lateral clusters, each cluster subtended by a leaf or bract. Spikelets about 2 lines long, usually 2-flowered, with about 3 empty glumes below the flowers. Hypogynous bristles 6, slender. Stamens 3. Nut very small, white, globose, with 3 ribs. *Chætospora imberbis*, R. Br.; *S. apogon*, R. et S.

Very common in damp or grassy situations. Common to Eastern and Southern Australia, and extending to New Zealand.

6. S. AXILLARIS, *Hook.* Stems tufted, procumbent, and spreading, branched, 1-many inches long. Leaves distributed on the stems, ½-1 inch long, filiform. Spikelets solitary or few together, in the upper leaf-axils, sessile or shortly stalked, about 1 line long, 1-flowered, with usually 2 outer empty glumes. Hypogynous bristles slender, normally 6. Stamens 3. Nut white, obovoid, 3-ribbed. *Chætospora axillaris*, R. Br.

Common in marshy pastures, principally in the south. It occurs also throughout extra-tropical Australia, and extends to New Zealand.

7. S. NITENS, *Hook.* Stems slender, simple, and erect, singly-emitted from a creeping rhizome, usually 2-6 inches high, but much exceeding these limits. Leaves few, at the base of the stem, short, filiform. Spikelets solitary or few together, in a terminal cluster, subtended by a very short or elongated erect bract, 1-2 lines long, the glumes not as regularly distichous as in most species, 2 or 3-flowered, with 2 or 3 outer empty glumes at the base. Hypogynous bristles slender, 6, with a few long woolly hairs towards their base. Stamens 3. Nut 3-angled, smooth. *Chætospora nitens*, R. Br.

Common in wet heaths, principally near the sea. Along the coast of extra-tropical Australia; also in New Zealand.

A form of this variable plant is responsible for the Tasmanian record of *S. tepperi*.

3. ELYNANTHUS.

Spikelets 1 or 2-flowered. Glumes distichous, empty ones below and above the flowering glumes. Rhachis straight. Hypogynous bristles none. Stamens 3 or more. Style slender, with a thick base, persistent to and often as large as the ovary, at least in the fruit.

A small genus, with the habit and distichous glumes of *Schœnus*, but without its flexuose rhachis, and with a nut approaching *Caustis*.

E. CAPILLACEUS, *Benth.* Stems numerous, on a creeping rhizome, forming rather dense tufts, filiform, mostly 12-18 inches high, simple, leafless, beyond a few basal sheaths. Spikelets few, in a terminal panicle, usually 2-4, about 2 lines long, and very narrow. Stamens 3. Nut white, globose, 3-ribbed, crowned by the shrivelled pubescent style-base quite as long as itself. *Chætospora capillacea*, Hook.; *Schœnus capillaris*, F. v. M.

Longley, Huon, Southport, Zeehan, and many south and west districts, in wet heaths; also in Victoria and South Australia.

4. MESOMELÆNA.

Spikelets with 1 terminal perfect and often a lower male flower. Glumes distichous, 3 or 4 outer empty ones at the base. Hypogynous scales 3, flat. Stamens 3. Style thickened at the base, but deciduous, or only remaining on young fruit. Spikelets gathered into a dense, terminal, spherical head, with few broad bracts at the base, and interspersed.

A small genus, confined to Australian distribution.

M. SPHÆROCEPHALA, *Benth.* Densely tufted. Stems slender, simple, terete or slightly flattened, about 3 or 4 feet long. Leaves few, basal, flattened, or irregularly 3-sided, about as long as or shorter than the stems and less rigid. Heads about ¾ inch in diameter, very dense. Bracts broad and obtuse, but those below the head often with laminæ ½ inch long. Spikelets 2-3 lines long. Glumes obtuse. Style-base more persistent than in most of the genus. *Gymnoschœnus sphærocephalus*, Hook.; *Schœnus sphærocephalus*, F. v. M.

Common on wet heaths; also in New South Wales and Victoria.

5. CARPHA.

Spikelets with 1 terminal flower. Glumes distichous, a few outer empty ones. Hypogynous bristles 6, much larger than the nut, slender, copiously plumose. Stamens 3. Style slender, the base somewhat thickened, continuous with the ovary, persistent. Nut oblong, 3-angled.

A genus of few species, widely dispersed in the cooler temperate parts of the Southern Hemisphere.

C. ALPINA, *R. Br.* A small plant, of tufted habit. Stems sub-erect, simple, 6-12 inches high. Leaves basal, grass-like, mostly shorter than the stems.

Spikelets pale, about 4-6 lines long, lanceolate, stalked, few together, in 3 or 4 small clusters, each cluster subtended by a leafy bract, the whole forming a compact but interrupted panicle. Nut pale, about 2 lines long.

Very common on mountains. It occurs in New South Wales and Victoria, and is common in New Zealand.

6. HELEOCHARIS.

Spikelets many-flowered. Glumes imbricate all round the rhachis, empty ones few. Hypogynous bristles 3-8, rarely absent. Stamens 3 or fewer. Style with a thickened persistent base. Nut flattened or globose, and then usually 3-ribbed. Spikelet solitary, terminal, and continuous with the stem.

A rather large genus, with a distribution nearly as wide as the order.

Stems robust, hollow, with septa	1. *H. sphacelata.*
Stems slender.	
Stems usually exceeding 2 inches. Glumes not keeled ...	2. *H. acuta.*
Stems under 3 inches. Glumes keeled ...	3. *H. acicularis.*

1. H. SPHACELATA, *R. Br.* Stems simple, erect, from a creeping rhizome, 2 or more feet high, ¼-½ inch diameter, hollow, but with numerous transverse septa. Leaves none, except basal sheaths. Spikelet 1-2 inches long. Glumes broad, green, with a scarious margin. Hypogynous bristles rather long, denticulate. Nut rather flat, about 1 line long.

Common in fresh water, particularly in the south. It occurs almost throughout Australia, and extends to New Zealand

2. H. ACUTA, *R. Br.* Habit most variable. Stems simple, slender, erect, usually tufted, on a creeping rhizome, from 2 or 3 inches to 1 or 2 feet high. Sheathing scales closely appressed, the orifice truncate, with a minute tooth-like lamina. Spikelet ¼-1½ inch long, dense. Glumes acute or nearly so, with a prominent, often green, midrib and brown scarious margins. Hypogynous bristles usually 5 or 6, about as long as the nut, denticulate. Style-branches 3, rarely 2. Nut flat to nearly obovate, persistent. Base of style conical. *H. palustris*, F. v. M.; *H. gracilis*, Hook. "Fl. Tas."

Very common in marshy places. Common throughout Australia. It occurs in New Zealand, and probably extends to South America. It is very close to the northern *H. palustris*, R. Br

3. H. ACICULARIS, *R. Br.* Stems simple, slender, erect, many barren, tufted, on a creeping rhizome, 1-3 inches high. Sheathing scales closely appressed, less truncate at the orifice than the last, and without the minute lamina. Spikelet very narrow, 1-2 lines long, few-flowered. Glumes obtuse, with an obscure or distinct pale keel, the sides brown and scarious. Style-branches 3. Hypogynous bristles shorter than the nut, slender, often obscure or absent. Nut 3-ribbed, the persistent base of the style very small. *H. pusilla*, R. Br. (included).

South Esk River. It occurs in New South Wales, Victoria, and South Australia, and has a wide distribution in both Hemispheres.

> The Tasmanian plant is chiefly referable to *H. pusilla*, R. Br., but I have preferred to follow von Mueller in combining the two. It much resembles a small *Scirpus* without a terminal bract.

7. SCIRPUS.

Spikelets several-flowered. Glumes imbricated all round the rhachis, all flower-bearing or only 1 or 2 empty ones. Hypogynous bristles variable, sometimes absent. Stamens 3-1. Style continuous with the nut, deciduous, except a short base. Spikelets single or many terminal, but thrust aside by a leaf-like bract, never continuous with the stem, as in *Heleocharis*.

The genus is large, and found in all parts of the world.

i.	Spikelets nearly always solitary...	ii.
	Spikelets usually few or many	vii.
ii.	Spikelets 2-3 lines long	iii.
	Spikelets often less than 1 line	iv.
iii.	Nuts usually granular, and the outer surface convex	2. *S. crassiusculus.*
	Nut flat and shining	3. *S. lenticularis.*
iv.	Plant usually submerged. Spikelet narrow ...	1. *S. fluitans.*
	Terrestrial. Spikelet relatively broad	v.
v.	Leaves well developed. Nut acutely angled, smooth	6. *S. cartilagineus.*
	Leaves reduced to sheaths	vi.
vi.	Nut obtusely angled to nearly globose	4. *S. riparius.*
	Nut longitudinally striate...	5. *S. setaceus.*
vii.	Spikelets 2-3 lines, few	viii.
	Spikelets in a dense spherical head	8. *S. nodosus.*
	Spikelets 4-9 lines...	ix.
viii.	Glumes pale or mostly so	6. *S. cartilagineus.*
	Glumes dark purple	7. *S. inundatus.*
ix.	Spikelets few, sessile	9. *S. pungens.*
	Spikelets few, shortly stalked	11. *S. maritimus.*
	Spikelets many, stalked	10. *S. lacustris.*

1. S. FLUITANS, *Linn.* Small, tufted or elongated, in water. Leaves filiform, alternate, mostly shorter than the stems. Spikelets solitary, terminal. Bracts often very small, 1½-2 lines long. Glumes about 6, the lowest longer than the others, often as long as the spikelet. Stamens 3. Nut broad, smooth, biconvex. *Isolepis fluitans*, R. Br.

Common in still fresh water. Throughout extra-tropical Australia and temperate districts of both Hemispheres.

> Var. *terrestris*, F. v. M. Developed on soil. Stems obsolete. Leaves and scapes tufted. Spikelets rather larger, and with more flowers than in the type.

2. S. CRASSIUSCULUS, *Hook.* Plant tufted at the nodes of a creeping rhizome. Leaves flat, mostly 2 or 3 inches long, from ½-1⅓ line wide. Stems about as long or longer than the leaves. Spikelet solitary, terminal, about 3 lines long, the subtending bract short. Glumes numerous, obtuse to nearly acute, obscurely striate. Style-branches 2. Nut flat, pale, smooth, the back convex, the margin generally flattened, but not always so. *Isolepis crassiusculus*, R. Br.

Common on mountain-tops, near George's Bay, Circular Head, &c., in pools; also in Victoria and New South Wales.

3. S. LENTICULARIS, *Spreng.* Usually densely tufted. Leaves filiform, 1-2 inches long, 3 or 4 to each stem at the base, and usually 1 above the base. Stems slender, 1-3 inches long. Spikelet solitary, terminal, pale, about 2 lines long. Bracts usually little longer. Glumes about 6, nearly equal. Stamens usually 2. Nut biconvex, smooth, pale to flat on inner surface, polished and brown. *Isolepis lenticularis*, R. Br.

Common in swamps; also in New South Wales.

4. S. RIPARIUS, *Spreng.* Densely tufted, with numerous filiform stems, 2-8 inches. Leaves normally reduced to sheathing bases. Spikelet usually solitary, about 1 line long. Bract obsolete to ¾ inch long, and then thrusting the spikelet to one side. Glumes short, broad, obtuse, except the prominent midrib.

Stamens normally 3. No hypogynous bristles. Nut minute, as broad as long, sub-globose to obtusely triquetrous, minutely granular to smooth. Doubtfully distinct from *S. savii*, Seb. et Maur., of the Northern Hemisphere. *Isolepis riparia*, R. Br.

Very common in damp places. Extra-tropical situations throughout both Hemispheres.

5. S. SETACEUS. *Linn.* Differing from the last only in the nut being prominently longitudinally striate.

Reported from Tasmania by Gunn and Stuart; also extra-tropical Australia. Common in the Northern Hemisphere.

6. S. CARTILAGINEUS. *Spreng.* Tufted, stems numerous, filiform, 1-6 inches, simple. Leaves filiform, alternate, shorter than the stem, not normally reduced to the sheaths only, as in allied forms. Spikelets 1-2 lines, few together, rarely solitary, terminal, subtending bracts well developed, rarely thrusting the spikelets to one side. Glumes many, small, broad, and obtuse, with a thick green prominent midrib, sides sub-scarious, striate, pale, but usually spotted with dark purple. Stamens normally 3. No hypogynous bristles. Nut smooth, pale or dark, prominently triquetrous, rather longer than broad. *Isolepis cartilaginea*, R. Br.; *I. alpina*, H. (included).

Very common; also extra-tropical Australia and Southern Hemisphere generally.

Var. *propinqua*. Similar in habit to the type, but more slender. Spikelet about 1 line long, usually solitary, and very often thrust to one side by the elongated bract. One or two of the stamens often aborted. Nut about as long as the glume, often rather narrow, prominently angled, smooth, gray to brown. *Isolepis propinqua*, Nees (not of R. Br.) Very common in damp situations. General distribution same as last.

7. S. INUNDATUS. *Spreng.* Habit most variable, tufted; generally the stems numerous and simple, or branched at the inflorescence or proliferous, the stem then becoming stoloniferous; others short and simple, as in forms of *S. cartilagineus*; others, again, simple, elongated, and very slender, with the appearance of even slender forms of *S. setaceus*. Leaves generally reduced to the sheathing bases, but laminæ sometimes present. Spikelets mostly about 2 lines long, generally few together, in a cluster, sometimes solitary. Glumes generally rather numerous, broad and obtuse, with a prominent green nerve that is produced into a point, and sub-scarious, coarsely striated, pale, or more generally purple. Stamens usually solitary. Nut prominently 3-angled or the dorsal angle obtuse, pale, smooth, or shining. *Isolepis prolifera*, Hook.; *I. gaudichaudiana*, Kunth.

Very common, chiefly in water or mud. It occurs throughout Eastern and Southern Australia, and extends to New Zealand.

8. S. NODOSUS, *Rottb.* Stems from a creeping rhizome, usually appearing tufted, simple, 1-2 feet high, generally somewhat flattened. Leaves reduced to few basal sheathing scales. Spikelets brown, about 2 lines long, numerous, in a spherical head, about $\frac{1}{2}$ inch diameter, terminal, but thrown to one side by the subtending bract appearing to continue the stem. Glumes rather numerous, the midrib thickened and usually prominent. Stamens usually 3. Style-branches 3. Nut broad, obtusely 3-angled, the dorsal angle very obtuse, polished. *Isolepis nodosa*, R. Br.

Very common in sandy places on the coasts, also throughout extra-tropical Australia, and widely distributed throughout the temperate parts of tde Southern Hemisphere.

9. S. PUNGENS, *Vahl.* Rhizome creeping. Stems erect, simple, 3-angled, generally under 2 feet high. Leaves few, at the base and on the stem, flat but sharply keeled, usually shorter than the stem. Spikelets $\frac{1}{4}$-$\frac{1}{2}$ inch long, few

together, in a sessile cluster, rarely solitary, the subtending bracts leaf-like, the outer one 2 or 3 inches long, erect, throwing the cluster to one side. Glumes numerous, scarious, emarginate, the midrib prominent, and prolonged into a short point. Hypogynous bristles short, normally 6, sometimes more or less deficient. Nut flat, obovate, polished, about 1 line long.

Common in brackish and fresh water swamps, especially in the south; also throughout Southern Australia. Widely distributed throughout temperate regions in both Hemispheres.

10. S. LACUSTRIS, *Linn.* Habit of the last, only more robust and the stems cylindrical, except near the inflorescence. Leaves reduced to sheathing scales at the base of the stems. Spikelets $\frac{1}{4}$-$\frac{1}{2}$ inch long, numerous, in an irregular compound umbel, subtended by 2 bracts, the outer one erect and throwing the umbel partly aside. Glumes numerous, scarious, emarginate, the midrib prolonged into a very short point. Hypogynous bristles usually 6, about as long as the nut. Nut flat, obovate, polished, about 1 line long.

Rather common in fresh water; also throughout all but the more tropical portions of Australia, and common to extra-tropical parts of both Hemispheres.

11. S. MARITIMUS, *Linn.* Similar in habit to *S. pungens*, but more robust, with the same triangular stems and flat keeled leaves. Spikelets about $\frac{3}{4}$ inch long, sometimes few in a sessile cluster, but more frequently many and the inflorescence branched. Glumes numerous, scarious, slightly or not at all emarginate, the midrib prominent and prolonged into a recurved point. Hypogynous bristles generally 6, and shorter than the nut. Nut flat, obovate, polished, about $1\frac{1}{2}$ line long.

Common in salt marshes. Throughout extra-tropical Australia, and the extra-tropical parts of both Hemispheres.

8. CHORISANDRA.

Spikelets many-flowered. Glumes imbricated all round the rhachis, but the outer ones distichous, all the outer glumes with a male flower of a single stamen in their axils. Pistillate flower solitary and terminal. Style-branches 2. Nut obovate, sometimes slightly flattened, with 8 prominent ribs. Spikelets numerous, in a sessile, globular, compacted head, each subtended by a short bract, and the whole by an erect stem-like bract, throwing the head aside. Stems from a creeping rhizome.

The genus is small, and confined to Australia and New Caledonia. Its inflorescence is peculiar, and is often described as a single spikelet, the interspersed subtending bracts being then considered glumes, and the above described glumes as very numerous and glume-like hypogynous scales.

Stems about 1 line diameter, about 1 foot high ... 1. *C. enodis.*
Stems 2-4 lines diameter, transversely sepate inside,
2-4 feet high ... ... 2. *C. cymbaria.*

1. C. ENODIS, *Nees.* Stems erect, simple, about 1 foot high and 1-$1\frac{1}{2}$ line thick, without transverse septa. Inner leaves stem-like, outer ones reduced to sheathing scales. Head about $\frac{1}{2}$ inch diameter, nearly black, the erect bract only slightly dilated at the base. Spikelets flat; the outer pair of glumes folded and keeled, larger than the rest, acute; inner glumes narrow and gradually smaller, about 10-15. Nut slightly flattened, about 1 line long.

Wet places near George Town (Gunn); also throughout Southern Australia.

2. C. CYMBARIA, *R. Br.* Stems rather stout, hollow, divided by transverse septa, 2-4 or more feet high, 2-6 lines diameter. Leaves usually short, flat, and broad, being reduced in many instances to open sheaths, but sometimes stem-like and as long as or longer than the stem. Head $\frac{1}{2}$ to nearly 1 inch diameter,

the erect bract slightly or not at all dilated at the base, except where the inflorescence is unusually small. Spikelets sub-cylindrical. Bracts about 15, the outer ones largest, mostly spathulate, or the inner ones linear. Nut obovate, 1½ line long.

Henty River, Apsley River. It occurs also in Queensland, New South Wales, Victoria, and Western Australia.

9. OREOBOLUS.

Spikelet with a solitary terminal flower. Glumes 3 or 2. Hypogynous scales 6, exceeding and enclosing the nut. Stamens 3 or fewer. Style slender, deciduous, 3-branched. Nut smooth. Spikelets solitary, terminal, or rarely few in a raceme.

A genus of but 2 species, confined to the Southern Hemisphere.

O. PUMILIO, *R. Br.* A small densely-tufted plant, the stems divided, seldom 1 inch long, densely covered by the leaf-sheaths. Leaves distichous or irregularly imbricating, the sheaths broad, laminæ flat, about ¾ inch long or more, about ½ line broad, rigid, scabrid towards the apex. Spikelets generally solitary, but sometimes 2-4, in a close spike or panicle, just emerging from the axil of a leaf when in flower, the peduncle ½-1 inch long when in fruit. Glumes distichous, inserted close together, usually 3, but occasionally 2, the outer one leaf-like and often 3 or 4 lines long, the innermost one shorter, more scarious, and enclosing the flower. Stamens 3, but sometimes only one, in Tasmanian plants at least. Hypogynous scales in 2 series, nearly equal, lanceolate, ciliate, rather longer than the nut, erect and persistent. Nut obovoid, smooth, pale, pubescent at the top, about ½ line long.

Common on mountain summits; also in Victoria, New South Wales, and New Zealand to South America.

10. LEPIDOSPERMA.

Spikelets with a single, terminal, hermaphrodite flower, and generally 1 or more male flowers below it. Glumes few, imbricated all round the rhachis. Hypogynous scales 6, thin and often minute when in flower, thickened and appressed to the base of the nut when mature. Stamens normally 3. Style slender and deciduous, normally 3-branched. Nut ovoid, obtusely 3-angled, with a pale cushion-like apex. Spikelets mostly in much-branched, compound, loose or dense, panicles, each branch and flower subtended by a bract that passes into the glumes.

The genus is chiefly Australian, but extends from Eastern Asia to New Zealand. Some of the species are fairly constant in structure; others, on the contrary, are most variable and ill-defined.

i. Stems robust, 3-8 lines diameter... ... ... ii.
Stems slender, mostly under 2 lines diameter... v.
ii. Inflorescence dense, in a thyrsoid panicle ... iii.
Inflorescence linear or loose ... . iv.
iii. Stems biconvex, 2-3 feet ... . 1. *L. gladiata.*
Stem flat or concave on one side.. ... .. 3 *L. squamata.*
iv. Stems very biconvex, margin smooth, inflorescence pale ... ... 2 *L. longitudinale.*
Stems biconvex, with acute cutting margins. Spikelets brown... ... ... 4. *L. elatior.*
v. Stems narrow, flat ... ... vi.
Stems cylindrical ... ... 8. *L. filiforme*
vi. Margin minutely rough ... ... 5. *L. laterale.*
Margin smooth ... ... 6. *L. lineare.*
Margins smooth. Flowers few, the stalks bent between them ... ... 7. *L. tortuosum.*

1. L. GLADIATA, *Lab.* Stems flat, generally 3 or 4 feet high and $\frac{1}{2}$-1 inch wide, convex in the centre, flat towards the margin or sometimes flat throughout; margin acute, but not scabrous. Leaves similar to and about as long as the stems. Panicle rather dense, and often thyrsoid, 2-5 inches long, subtending bract shorter than the panicle. Spikelets pale brown, 2-3 lines long. Glumes obtuse or with a short point, keeled, surface rough, at least when young. Hypogynous bristles lanceolate, acute. Nut without defined angles.

Common on sandy coasts; also throughout Southern Australia and New South Wales.

2. L. LONGITUDINALE, *Lab.* Stems biconvex, with plain, almost obtuse, margins, generally twisted, 3-5 feet high, 2-4 lines broad. Leaves similar. Panicle erect, linear, interrupted, 6 inches to 1 foot long. Spikelets numerous, in rather dense clusters, pale brown, 2-3 lines long. Glumes obtuse or with short points. Nut about 1 line long, the angles not apparent. Scales lanceolate, acute, united in pairs, $\frac{1}{3}$-$\frac{1}{2}$ as long as the nut.

Very common in brackish and fresh swamps; also throughout South and East Australia.

3. L. SQUAMATA, *Lab.* Stems 1-2 feet high, flat, or concave on one side and convex on the other, 2-4 lines wide, margin minutely scabrous. Leaves similar to but shorter than the stems. Panicle short, rather dense, pyramidal or oblong, the subtending bract generally as long as or longer than the panicle. Spikelets crowded in linear clusters, slender, about 3 lines long. Glumes obtuse, except the prominent rib extended into a short point, rough. Nut about $\frac{3}{4}$ line long. Scales thinner than in most species, with delicate ciliate points, about half as long as the nut. *L. laterale*, Hook. "Fl. Tas.;" also referred to *L. concava*, R. Br.

Common in sandy places, chiefly near the coast; also throughout Eastern and Southern Australia.

4. L. ELATIOR, *Lab.* Very variable. Stems 3-6 feet, 2-4 lines broad, biconvex, the margins thin, minutely rough. Leaves similar. Panicle 8-18 inches long, interrupted, the branches short and erect when growing in open country, much extended and drooping in shade; subtending bract leafy, and from short to much exceeding the inflorescence. Spikelets pale to dark brown, 1$\frac{1}{2}$-2 lines long. Glumes few, minutely rough, the midrib prominent and extended into a short point. Nut $\frac{1}{2}$-1 line long. Scales in most specimens lanceolate and very short.

Very common; also in Victoria and South Australia.

The following are fairly well marked varieties:—

> Var. *ensiformis.* Similar to the more luxuriant specimens of the type, but the leaves are quite flat and $\frac{3}{4}$-1 inch broad. Scales very long and slender.
>
> Var. *oldfieldii.* Similar to the robust forms of the type, only the glumes are dark brown, and panicle branches are erect and dense. Scales half as long as the nut, with delicate ciliate points. *L. oldfieldii*, H.

5. L. LATERALE, *R. Br.* Very variable. Stems 1-4 feet, flat, or convex with flat margins, or convex throughout; edges in the shorter forms minutely scabrous, in the taller smooth; always narrow, 2-3 lines broad. Leaves similar. Panicle 1-8 inches, loose and interrupted, the branches erect in the smaller, much-spreading in the taller specimens. Subtending bracts short. Spikelets pale, with a few not very pointed glumes, about 3 lines long in the smaller, erect, panicled forms, 1$\frac{1}{2}$ line in the tall looser ones. Nut 1-1$\frac{1}{2}$ line, shining. Scales nearly as long as the nut, narrow, ciliate. *L. concava*, H., *L. globosa*, Lab., *L. angustifolia*, H., included.

Very common; also South-East and East Australia.

The species is distinct in the type form, but passes without a break into *L. lineare*, R. Br. The tall, loose, flowered form is commonly referred to *L. elatior*, Lab.

6. L. LINEARE. *R. Br.* A small variable species. Stems mostly under 1 foot tall and under 2 lines diameter, convex, the margin nearly obtuse. Leaves similar, often exceeding the stems. Panicle narrow, linear, interrupted, 1-1½ inch long. Spikelets few, pale, about 2 lines long, free or clustered. Subtending bract shorter or longer than the panicle. Glumes glabrous or nearly so, acute. Nut about ¾ line long, the angles with pale lines, but not very conspicuous. Scales broad and short under the nut.

Common in stony pastures: also in New South Wales, Victoria, and South Australia.

Var. *inops.* Plant densely clustered, 2-4 inches high. Stems and leaves nearly flat, ½ line wide. Panicle reduced to 2 or 4 spikelets on short stems, the bracts leafy, the outer one erect and often 2 inches long. Near Waterworks (Hobart). Sorell Creek, &c.

7. L. TORTUOSUM, *F. v. M.* Stems about 1 foot high, generally falcate and sub-decumbent, ½-1 line wide, convex, with minutely scabrous margins. Leaves similar to, but generally shorter than, the stems. Panicle ¾-1 inch long, the branches few, sometimes bearing clusters, but more often the spikelets solitary and the rhachis flexuose; subtending bract generally very short, rarely as long as the panicle. Spikelets dark brown, about 3 lines long. Glumes few, obtuse or rarely nearly acute, the two inner ones much exceeding the outer ones, and spreading when in fruit. Nut about 1 line long, with prominent white angles. Scales lanceolate, ⅓-½ as long as the nut.

Common in many heathy districts: Huon Road Kingston, &c; also in Victoria.

8. L. FILIFORME, *Lab.* Stems densely tufted, slender, terete, 1-2 or even 3 feet high. Leaves similar but shorter, sometimes reduced to the long broad sheaths. Spikelets pale, 4 or 5 lines long, slender, each contained in a bract as long as itself, usually 3-6 together, in a loose terminal spike about 1-2 inches long. Glumes few, narrow, obtuse or slightly acute. Nut 1½ line long, narrow-oblong, the angles white. Scales short, acute.

Common in damp sandy heaths; also in Victoria, South Australia, and New South Wales.

11. CLADIUM.

Spikelets with 1 or more flowers, but usually the lowest only fertile. Glumes few, imbricate all round the rhachis, the one bearing the fertile flower usually the largest. No hypogynous bristles. Stamens usually 3. Style slender, deciduous. Nut oblong or 3-angled, with a cushion-like apex in some species. Inflorescence varied, generally in compound panicles, each branch and spikelet subtended by a bract.

Widely spread in both Hemispheres.

The forms are various, and have in consequence given rise to many generic appellations. *C. mariscus*, R. Br., is included in Hook. "Fl. Tas.," but its presence in Tasmania seems more than doubtful. It is consequently omitted.

Leaves much shorter than the stem, often obsolete.
Spikelets numerous, in dense clusters ... ... 1. *C. glomeratum.*
Spikelets numerous, in a loose-branched interrupted panicle ... ... 4. *C. gunnii.*
Spikelets few, at the ends of rigid stems ... ... 5. *C. junceum.*

Leaves well-developed.
  Leaves and stem square ... ... 2. *C. tetraquetrum.*
  Leaves flat, smooth, erect ... ... 3. *C. schœnoides.*
  Leaves flat, involute, tapering and drooping ... 6. *C. filum.*

(Baron von Mueller occasionally in his works suppressed the genus, and placed the species in *Gahnia.*)

1. C. GLOMERATUM, *R. Br.* Stems from a creeping rhizome, terete, rather slender, 1-3 feet high. Leaves terete, much shorter than the stem, mostly reduced to the sheath. Inflorescence an interrupted compound panicle, the spikelets gathered into more or less dense stalked clusters, $\frac{1}{2}$-$1\frac{1}{2}$ inch diameter, the subtending bracts broad and short. Spikelets about 2 lines long. Glumes few, acute. Stamens 3. Style-branches 3. Nut 1-$1\frac{1}{2}$ line long, dark, shining, angles hardly marked.

In many localities, on the borders of swamps; also throughout Australia, and extending from the Indian Archipelago to New Zealand.

2. C. TETRAQUETRUM, *Hook.* Stems 1-3 or 4 feet high, irregularly angled or nearly terete. Leaves often as long as the stems, irregularly 4-angled, the outer reduced to the sheaths, one inner one, with a long sheathing base, reaching half-way up the stem, and a very short lamina. Inflorescence an interrupted, loose, much-branched panicle, 2-4 inches long. Spikelets numerous, each one (as well as the branches) subtended by small bract, lanceolate, about 2 lines long, with a single flower. Glumes acute, few. Stamens 3. Style-branches 3. Nut $1\frac{1}{2}$ line long, with a distinct cushion-like apex. *Lepidosperma tetragona*, Lab.

Common in numerous moist situations; also in New South Wales, Victoria, and South Australia.

3. C. SCHÆNOIDES, *R. Br.* Tufted. Stems mostly 6-12 inches high, flat or convex, about 1 line broad, margins obtuse. Leaves similar to and generally longer than the stems. Inflorescence an interrupted panicle, the clusters of spikelets generally rather dense, 1-4 inches long; glumes subtending the branches, long and leaf-like, or about as short as the panicle; the common rhachis generally flexuose. Spikelets numerous, except in starved specimens, lanceolate, 2 lines long, with a solitary flower. Glumes few, narrow, acute. Stamens 3. Style-branches 3. Nut black, polished, obscurely 3-angled, $\frac{3}{4}$ line long; when ripe generally hanging from the panicle, and supported by the persistent filaments.

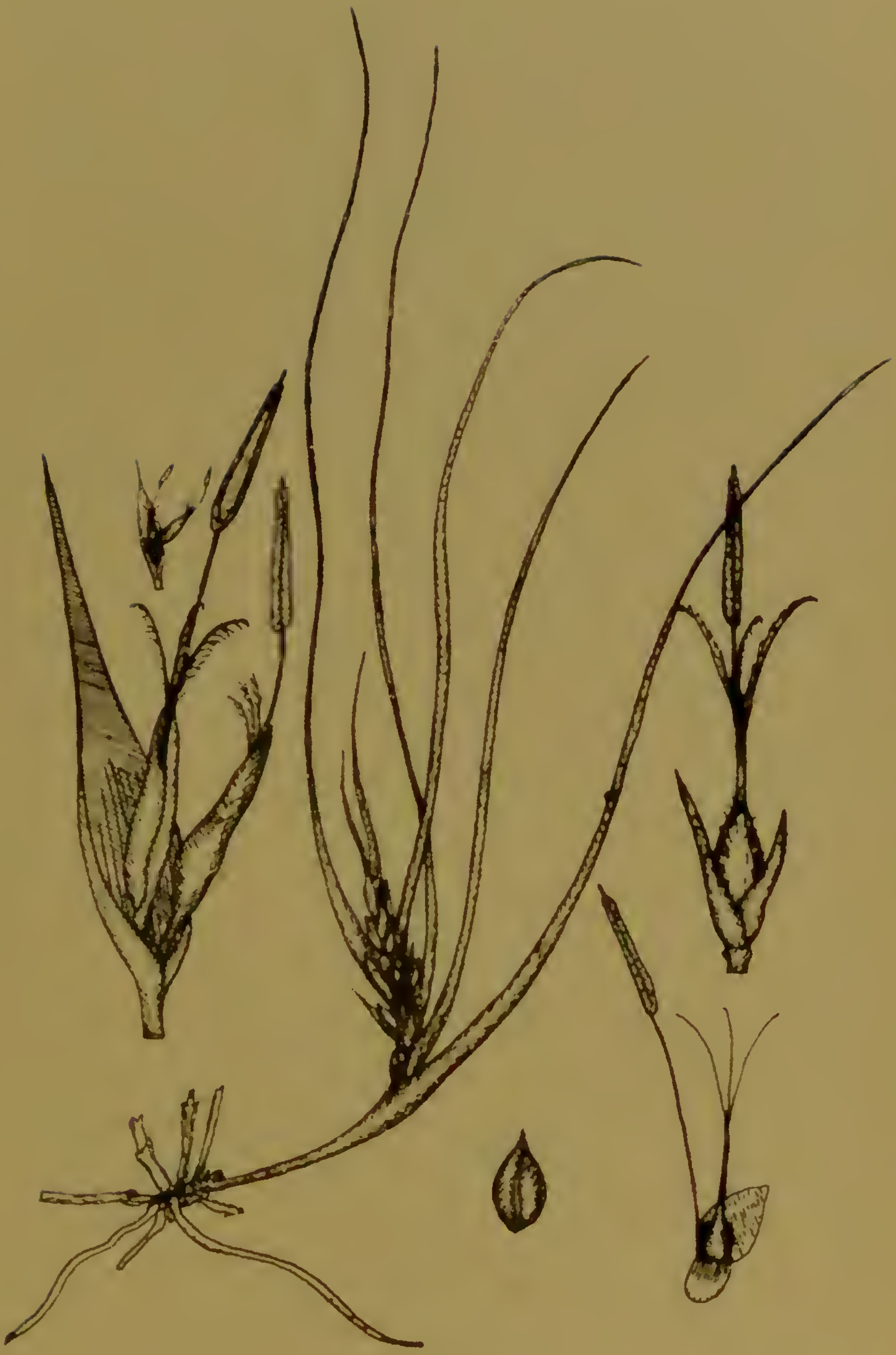
Common on sandy heaths; also throughout Eastern and Southern Australia.

4. C. GUNNII, *Hook.* Stems terete, slender, mostly 1-2 feet high. Leaves all reduced to sheathing bases, or sometimes 1 or 2 with a stem-like lamina. Inflorescence a narrow, erect, interrupted panicle. Spikelets few, not collected into clusters, about 3 lines long, with a solitary flower. Glumes few, narrow, acute. Stamens 3. Nut obtusely 3-angled, polished, with a cushion-like apex. *C. laxiflorum*, Hook. (included).

Found occasionally in swampy localities; near New Norfolk, Formosa, Mersey River, Evandale, Reminé, &c.: also in New South Wales, Victoria, and South Australia, and extending to New Zealand.

5. C. JUNCEUM, *R. Br.* Stems erect, from a creeping rhizome, terete, rush-like, the surface pale and minutely striate, generally 1-2 feet high. Leaves reduced to their closed sheaths, a few at the base and often 1 or 2 dispersed on the stem. Inflorescence a short, erect, interrupted or compact, spike-like panicle. Spikelets few, about $2\frac{1}{2}$ lines long, with a solitary flower. Glumes in 2 opposite rows, the keel prominent and ciliate, acute; occasionally a small glume, and rarely a staminate flower, above the perfect one. Stamens 3. Nut black, polished, $\frac{3}{4}$ line long, globose, with an obscure cushion-like apex.

Common in wet heaths and sandy swamps. It occurs throughout Australia, and spreads to New Zealand.



GAHNIA GRAMINIFOLIA. *Rod*

[illegible]

6. C. FILUM, *R. Br.* Stems numerous, in dense tufts, erect, 2-4 feet high. Leaves flat, rather shorter than the stem, attenuated into subulate points, margins scabrous and involute, dispersed at the base and on the stem, passing above into the floral bracts. Inflorescence a linear interrupted panicle, 4-12 inches long, each branch and spikelet subtended by a bract, the outer ones leaf-like, the inner ones passing into the glumes, each cluster of spikelets rather dense but linear, 1-2 inches long. Spikelets pale, very numerous, 2-3 lines long, with a solitary flower, and sometimes a terminal empty glume or staminate flower. Glumes few, very narrow, and acute. Stamens 3. Nut linear, 3-angled, 2-3 lines long, dark brown and smooth.

Bellerive, Clarence Plains, Pipeclay Lagoon, Swanport, George's Bay, &c.; also in Victoria and South Australia.

> The species has the habit of and is often confounded with *Gahnia trifida*, from which plant it can be easily distinguished, besides in its essential details, by the spikelets being formed in linear instead of sub-globose clusters.

12. GAHNIA.

Spikelets with 1 terminal perfect flower, and generally a staminate flower below it. Glumes generally many, the middle ones the largest, the outer and inner ones gradually smaller. Hypogynous bristles none. Stamens generally 3-6. Style continuous with the ovary, the base generally persistent, branches 3-5. Nut obovoid or obscurely 3-angled. Inflorescence a compound interrupted panicle. The filaments generally persistent, and sometimes supporting the loose nut, as in *Cladium schœnoides*. Leaves with usually involute margins.

The genus, which is not clearly separated from *Cladium*, is widely dispersed from the Indian Archipelago through Australia and New Zealand, to the Southern Pacific.

Glumes acute.
  Tall with pale glumes
    Spikelets densely clustered .. 1. *G. trifida.*
    Spikelets freely dispersed 2. *G. fitzgeraldi.*
  Usually 1½ foot. Glumes black .. .. 3. *G. radula*
  About 3 inches, in a dense cushion ... 5. *G. graminifolia.*
Glumes obtuse ... . 4. *G. psittacorum.*

1. G. TRIFIDA, *Lab.* Stems numerous, in dense tufts, erect, mostly 2-4 feet high. Leaves at the base and scattered on the stems, flat, with scabrous involute margins, narrowed above into long subulate points, the sheath split, and bearing a ligule at the orifice; basal leaves about as long as the stems; stem-leaves shorter, passing above into the floral bracts. Inflorescence a branched, erect, interrupted panicle, 6-12 inches long. Spikelets collected into dense oblong or globose clusters, each branch and spikelet subtended by a bract. Spikelets numerous, pale brown, about 2 lines long, bearing a single terminal flower. Glumes few, the middle ones with a prominent keel that is prolonged into a rather long point. Stamens 4-6. Nut obovoid, dark, shining, about 1 line long, supported by the persistent filaments.

Common in brackish and fresh swampy places; also in South and East Australia.

2. G. FITZGERALDI, *Rod.* Stems on a creeping rhizome, tufted, about 2 feet high, slender. Outer leaves reduced to the sheaths; stem-leaves about as long as the stems, but passing into the floral bracts above, flat, with involute scabrous margins, and with long subulate points. Panicle 8-12 inches long, interrupted, the branches arising few together, unequal, usually elongated and erect, bearing the spikelets freely distant from one another, the whole panicle having a linear appearance, but sometimes they are shorter and contracted, the

spikelets then forming small, distant, rather dense, heads. Spikelets numerous, dark brown, about 1½ line long, more or less pedicelled, each subtended by a narrow aristate bract. Outer empty glumes about 4, the keel prolonged into a short point. Flowers 2; the lower one male, with 3 or 4 stamens; the upper one perfect, above which is an empty glume. Nut as in *G. trifida*, but the filaments are semi-deciduous, and consequently do not support the nut, as in that species.

Mathinna, Swanport, George's Bay, &c.

> The species, though very different in general aspect, is close to *G. trifida*, Lab. The second flower and deciduous condition of the filaments, besides details of general character, are constant in the very numerous specimens I have examined.

3. G. RADULA. *Benth.* Stems erect, mostly 2-3 feet high, on a creeping rhizome, but not tufted, as in allied species. Leaves flat, with long subulate points, the margin scabrous and involute, lower ones about as long as the stems, the stem-leaves gradually passing into the floral bracts. Panicle 6-12 inches long, much-branched, but the branches erect. Spikelets dark brown, numerous, free from one another, in linear spikes or racemes, narrow, 2-3 lines long, 2-flowered, the upper one alone developing fruit. Glumes about 7 or 8, the middle ones keeled and acute, the inner ones becoming short, broad, obtuse, and closely enveloping the flowers. Stamens 3. Nut obovoid, 1 line long, obtusely 3-angled, dark, nearly black. *Cladium radula*, R. Br.; *G. melanocarpa*, Hook. "Fl. Tas.," but not the plant so named by R. Br.

Common on dry heaths, especially in the south; also in Victoria, South Australia, and New South Wales.

4. G. PSITTACORUM, *Lab.* Stems numerous, erect, in dense tufts, mostly 5 or 6 feet high. Leaves long, narrow, scabrous, margins involute. Panicle 1-2 feet long, loose, spreading, the branches erect at first, drooping when in fruit. Spikelets dark brown, pedunculate, 3 or 4 lines long. Glumes numerous, very obtuse. A male flower developed close below the fertile one, but often rudimentary. Stamens 4-6. Filaments long and persistent. Style-branches normally 4. Nut about 1½ line long, red, and polished in most Tasmanian specimens. *Cladium psittacorum*, F. v. M.

Very common, chiefly in damp places; also throughout Eastern and Southern Australia.

5. G. GRAMINIFOLIA, *Rod.* A small densely-tufted plant, forming tangled masses, 1-2 feet diameter. Stems very short, seldom exceeding 3 inches, numerous, from a much-branched rhizome. Leaves flat, grassy, and spreading, 3-8 inches long, 2 lines wide, but subulate towards the apex, in the dried state the margins involute, the sheathing base arising from a thickened node, split, and bearing a distinct ligule at the orifice. Panicle short, few-flowered, hidden among the leaves. Spikelets few, distant, or in distant clusters, pale and succulent when in flower, 2 lines long. Flower solitary. Glumes usually 5, 2 outer ones lanceolate and obtuse, 3 inner ones nearly orbicular, the flowering glume very short and closely enveloping. Stamen solitary. Anther innate. Filament long, sub-persistent. Style long, slender, divided nearly to the base into 3 branches. Nut ovoid-oblong, 1-1½ line long, nearly black, polished, obscurely 3-angled.

Common on hills from Huon Road to Mount Nelson.

13. CAUSTIS.

Spikelet with a single terminal flower, and often a male or rudimentary flower below it. Glumes 3 or 4, inserted all round the rhachis, the inner one longest. Hypogynous bristles none. Stamens 3-6. Style continuous with the ovary. Base thickened, persistent. Branches 3. Nut oblong, crowned by the persistent base of the style. Leafless or nearly so, with the habit of the *Restiaceæ*.

The genus is confined to Australian distribution, and contains but few species.

C. PENTANDRA, *R. Br.* Stems erect, from a creeping rhizome, 2 or 3 feet high, branched in the upper portion, the branches somewhat flattened. Leaves reduced to sheathing scales. Spikelets distant, erect, terminal, and on very short lateral branches, bright brown, narrow, about ¼ inch long, the inner glumes with slender points. Stamens 4-6 in the perfect flower. Nut crowned with a large, pubescent, persistent style-base.

Not common, but widely distributed throughout the Northern and Eastern Coast; also in New South Wales, Victoria, South Australia, and Queensland.

14. UNCINIA.

Flowers in terminal cylindrical spikes, unisexual, the staminate flowers terminal. Ovary enclosed in a flask-like sheath, and with it a long, protruding, hooked bristle.

The genus is widely spread in the Southern Hemisphere, and extends northwards into Mexico.

Leaves filiform. Spike ¼ inch long …	1. *U. tenella.*
Leaves grassy. Spike 1-2 inches.	
Spike dense, ovoid …	2. *U. compacta.*
Spike linear …	3. *U. riparia.*

1. U. TENELLA, *R. Br.* 3-4 inches high, slender, usually in tufts. Leaves filiform, as long as the stem. Spike slender, about ¼ inch, usually with 3-4 staminate flowers above, and about twice as many pistillate ones.

Recherche, and also very common at an altitude of one to two thousand feet; also in Victoria and New South Wales.

2. U. COMPACTA, *R. Br.* Solitary or tufted, erect, stems 3-8 inches. Leaves flat, 1-2 lines wide, usually shorter than the stems, but sometimes much longer. Spike dense, ½-1 inch long, oblong, but sometimes rather narrow. Glumes ovoid, obtuse, 2 lines long, with a thickened green midrib. Staminate flowers few, terminal. Pistillate flowers many, the utricle shorter than the glume till ripe. *U. nervosa*, Boott., included.

Common on mountains; also in Victoria.

3. U. RIPARIA, *R. Br.* Slender, depressed, 6-18 inches long. Leaves narrow, flat, 1 line broad, usually exceeding the stem. Spike narrow, often interrupted, linear, 1-3 inches long. Glumes very obtuse, green. Staminate flowers few, terminal. Pistillate flowers many, the utricles shorter than the glumes.

Common in shady woods; also in Victoria and New South Wales.

15. CAREX.

Flowers unisexual, in spikelets that are solitary or clustered at the ends of the stems, the flowers each subtended by a glume, and the pistillate flowers contained within a flask-shaped utricle, which encloses the seed in fruit.

A world-wide genus of grassy sedges.

i. Flowers very few, in a single spike …	1. *C. acicularis.*
Flowers numerous, in many spikelets … …	ii.
ii. Staminate flowers not in distinct spikelets …	iii.
Staminate flowers all or most in distinct spikelets … … … … …	vii.
iii. Inflorescence seldom exceeding 1 inch …	iv.
Inflorescence 2-6 inches … … …	vi.

iv.	Bracts leaf-like, much exceeding the head ...	2.	*C. inversa.*
	Bracts short ...	v.	
v.	Leaves exceeding stems...	5.	*C. canescens.*
	Leaves shorter than stems ...	6.	*C. chlorantha.*
vi.	Stem 3-angled ...	3.	*C. paniculata.*
	Stem terete ...	4.	*C. tereticaulis.*
vii.	Spikelets sessile on the stem or nearly so ...	viii.	
	Spikelets conspicuously stalked ...	xiv.	
viii.	Glumes obtuse or nearly so ...	ix.	
	Glumes pointed ...	x.	
ix.	Utricles small, flat, erect ...	7.	*C. vulgaris.*
	Utricles small, swollen, spreading ...	8.	*C. flava.*
x.	Glumes of female spikelets gradually narrowed into a pointed apex ...	xi.	
	Glumes obtuse, except for the prolonged midrib ...	xii.	
xi.	Glumes pale green. Stems very short ...	10.	*C. breviculmis.*
	Glumes brown. Stems 6-8 inches ...	9.	*C. pumila.*
xii.	Male spikelets 4-10, in a terminal cluster ..	13.	*C. bichenoviana.*
	Male spikelets solitary ...	xiii.	
xiii.	Utricles short, very swollen, spreading ...	11.	*C. gunniana.*
	Utricles short, flat, erect, imbricate ...	12.	*C. barbata.*
xiv.	Utricles erect, imbricate ...	14.	*C. longifolia.*
	Utricles spreading, with a long slender neck ..	15.	*C. pseudocyperus.*

1 C. ACICULARIS, *Boott.* A small slender plant, tufted, stems 3-4 inches. Spikelet solitary, terminal, few-flowered, subtended by 1 or 2 bracts, linear, and often exceeding the spike. Leaves filiform, about as long as the stems. Utricle narrow, prolonged into a slender neck, about 2½ lines long. *C. archeri*, Boott.; *C. pyrenaica*, F. v. M.

Cuming Head, and probably in many localities, but overlooked; also Victoria, New South Wales, and New Zealand.

2. C. INVERSA, *R. Br.* Slender, often 1-2 feet. Leaves filiform, shorter than the stem. Spikelets usually 2 or 3, ovoid, about 4 lines long, sessile, in a terminal cluster, subtended by 1 or 2 rather long leafy bracts. Male flowers very few, at the base of each spikelet. Utricles flat, the neck short, about 1 line long, closely overlapping.

Brighton, Glenora, South Esk, and many other localities, chiefly in swamps: extra-tropical Australia and New Zealand.

3. C. PANICULATA, *Linn.* Tufted, coarse, erect, often 3 feet. Stems 3-angled, rough. Leaves nearly as long, flat, narrow, rough on the margins. Spikelets numerous, in a terminal, more or less interrupted, spike. Male flowers interspersed. Utricles about 1 line long, very convex, spreading, neck short. *C. appressa*, R. Br.

Very common in shady swamps; also extra-tropical Australia to New Zealand; also common in the Northern Hemisphere. In alpine localities the plant is stunted and the spike dense, as in *C. chlorantha.*

4. C. TERETICAULIS, *F. v. M.* Stems terete, otherwise habit and details as in the last.

Bellerive, Glenora, Perth, &c.; also extra-tropical Australia.

5. C. CANESCENS, *Linn.* Usually in dense tufts. Stem 6-10 inches. Leaves soft, grass-like, much longer. Spikelets 3-8, sessile, forming a rather close terminal spike, each pale, oblong, and ⅓ inch long. Male flowers few, towards the base. Utricles about 1 line long, ovate, compressed, with a short neck.

Lake on Ironstone Range; also Victoria. Common to Asia, Europe, and America. Alpine.

6. C. CHLORANTHA, *R. Br.* Commonly 3-4 inches high, rarely much longer. Stems grooved. Leaves flat, narrow, shorter than the stems. Spikelets usually 4-6, in a terminal spike, the subtending bract short or (in tall slender specimens) exceeding the spike. Male flowers numerous, interspersed. Utricles about 1½ line long, flattened, with a short neck, margin minutely ciliate.

Avoca, Blessington, and numerous localities in the north. Southern forms appear to approach more closely stunted forms of *C. paniculata*. It also occurs in South Australia, Victoria, and New South Wales.

7. C. VULGARIS, *Fr.* Tufted. Stems angular, 3-6 inches. Leaves usually longer, linear, flat. Spikelets linear to narrow-oblong, ¼-2 inches long, few, distant, sessile or nearly so, at intervals towards the apex of the stem, the lower ones subtended by long leafy bracts; the upper one male, lower ones female. Glumes oblong, usually very obtuse, in the female spikelets at least; purple-brown when the fruit is ripe. Utricle flat, oblong, narrowing into a short neck, 1-1½ line long, closely imbricating. *C. gaudichaudiana*, H., *C. cæspitosa*, L. (partly).

Very common throughout the Island; also temperate Australia, and temperate climates generally throughout the world.

8. C. FLAVA, *Linn.* Tufted. Stems 6-12 inches. Leaves flat, smooth, longer or shorter. Male spikelet terminal, solitary. Females about ½ inch long, 1-4, sometimes dispersed, with a long, leafy, subtending bract, but in Tasmanian specimens usually clustered close below the male. Utricles ovoid, 1½ line long, spreading, neck about ½ line long. *C. cataractæ*, R. Br.

Lake Country, near Launceston, East Coast, &c.

9. C. PUMILA, *Thun.* Creeping, emitting stems at intervals, 6-12 inches high. Leaves flat, much exceeding the stems. Spikelets few, nearly sessile, dispersed, each subtended by a leafy bract; 1-3 terminal ones male, linear. Female spikelets about 1 inch long; glumes oblong, acute, dark. Utricles rather spreading, convex, ovate, 3 lines long, corky, tapering into a short neck. *C. littorea*, Lab.

Common on coasts, except in the south; also South Australia, Victoria, New South Wales, Queensland, New Zealand, Eastern Asia, and South-Western South America.

10. C. BREVICULMIS, *R. Br.* Tufted, stems usually very short, often 1-2 inches, but not always so. Leaves flat, exceeding the stems. Spikelets few, close together in the stunted, distant in the taller forms, sessile or nearly so. Male spikelet solitary, linear, terminal. Female spikelets narrow, ¼-1 inch, pale green. Glumes narrow, with rather long subulate points. Utricles about 1 line, oblong, convex, usually minutely hispid, striate, narrowed into a short neck.

Very common in pastures; also South Australia, Victoria, New South Wales, to New Zealand; also India to Japan.

11. C. GUNNIANA, *Boott.* Tufted, stems usually 1 foot, but sometimes dwarfed to 1 inch. Leaves flat, 3-4 lines broad, with a conspicuous midrib. Spikelets few, distant except where dwarfed, shortly stalked. Male spikelet terminal, usually solitary. Female spikelets 1-1½ inch. Glumes 1½ line, obtuse, except for the shortly-protruding midrib. Utricles 2 lines long, convex, with a few slight ribs, tapering into a fairly long neck.

Longley, Derwent River above Bridgewater, Rocky Cape, Mersey River, &c.; also in South Australia, Victoria, and New South Wales.

12. C. BARBATA, *Boott.* Very similar in general habit to the last. Leaves narrower, without a conspicuous midrib. The male spikelet usually contains a few female flowers towards the base, and the female ones usually with a few males at the apex. Glumes as in the last, but the utricles about 1-1½ line long, flat, with faint ribs, tapering into a short neck.

Longley, Claremont, above Bridgewater, in swamps.

13. C. BICHENOVIANA, *Boott.* Stems 1-2 feet. Leaves as long as stems. Spikelets 7-14. Males terminal, in a cluster, 1½ inch long. Female, or mixed spikelets, dispersed lower down, shortly stalked, each subtended by a leaf-like bract. Glumes dark brown, obtuse, with a protruding midrib. Mature utricles not seen.

Woolnorth. Inserted from record only. Doubtful.

14. C. LONGIFOLIA, *R. Br.* Stems 1-2 feet. Leaves flat, about the same length. Spikelets 6-20, on rather long stalks, often nodding. One or two terminal ones male, lower ones female, but usually tipped with some male flowers. Utricles loosely imbricate, 2-3 lines long, 3-angled, tapering into a rather long neck. *C. longibrachiata*, Boeck.

Common in damp situations; also South and East Australia.

15. C. PSEUDOCYPERUS, *Linn.* Stem 3-angled, 2-3 feet. Leaves flat, as long as the stem. Spikelets about 2 inches long, few drooping, on long stalks, towards the apex of the stem, the terminal one male. Utricles spreading, longitudinally ribbed, ovate, 2-3 lines long, the neck long and slender. *C. fascicularis*, Sol.

Huonville, Derwent above New Norfolk, and numerous other river-banks. Extra-tropical Australia, New Zealand, and temperate climates throughout the world.

ORDER LXXXIX.—*GRAMINEÆ.*

Flowers solitary, or few or many together in dense distichous clusters or spikelets. Each flower contained in a bract or glume, with usually a smaller glume or pale on its inner side. There are usually two or more empty glumes below, and rarely one or more above, the flower or flowers of a spikelet. Perianth none, or perhaps represented by small scales, termed lodicules, below the pistil. Stamens generally 3, with versatile pendulous anthers. Pistil simple, the solitary ovule intimately blended with the ovary. Styles usually 2, with feathery stigmas. Fruit usually a mealy grain or minute utricle. Leaves with a split sheathing base and a ligule at the junction of the lamina. Inflorescence various, but the spikelets generally numerous.

What is here termed the flowering glume is in some works called the lower pale, and the smaller one the upper pale. All Tasmanian forms are herbaceous, and the fruit grain-like. Some tropical forms become almost of the character of trees, and the fruit is a berry. In *Sporobolus* the fruit is an utricle, from which the seed is usually expelled at maturity.

i. Spikelets sessile or very nearly so, on the rhachis ... ... ii.
Spikelets, at least the fertile ones, in a globose head ... ... xi.
Spikelets stalked, usually very numerous, in a dense or loose inflorescence, which is in a short head only in *Anthistiria* ... ... xii.
ii. Inflorescence divided into few finger-like branches ... ... iii.
Inflorescence in a simple spike... ... ... iv.
iii. Branches of inflorescence all arising at one place ... ... 31. *Cynodon.*
Branches arising in succession... ... ... 1. *Panicum.*
iv. Spikelets 1-flowered ... ... v.
Spikelets many-flowered ... ... ix.

v.	Spike several inches long. Spikelets closely appressed to the rhachis	vi.
	Spike short. Spikelets not closely appressed	viii.
vi.	Glumes obtuse	2. *Stenotaphrum.*
	Glumes acute	vii.
vii.	One glume usually hooked	5. *Hemarthria.*
	Glumes not hooked	48. *Lepturus.*
viii.	Glumes dark, the outer one the largest	4. *Zoysia.*
	Glumes green, outer ones very small	10. *Tetrarrhena.*
ix.	Spikelets small, all on one side of the rhachis, in a dense spike	33. *Cynosurus.*
	Spikelets in 2 rows, in a long loose spike	47. *Lolium.*
	Spikelets otherwise	x.
x.	Spike dense, all glumes with long scabrous awns	49. *Hordeum.*
	Spikelets usually 2, dispersed, awns long	46. *Brachypodium.*
	Spikelets numerous, never very densely arranged. Awns long, short, or none	45. *Agropyrum.*
xi.	Creeping on sand. Fertile flowers, in short, stalked, globose heads. Glumes many inches long	3. *Spinifex.*
	Head small, on a tall stalk. Glumes minutely awned, ½ inch long	30. *Echinopogon.*
xii.	Spikelet 1-flowered or with an abortive second flower	xiii.
	Spikelet 2-3-flowered, the empty glumes relatively large and enclosing the flowers	xxviii.
	Spikelet 2-many-flowered, the outer empty glumes usually short	xxxiv.
xiii.	Inflorescence of few spikelets, in heads, most glumes with long awns	7. *Anthistiria.*
	Inflorescence cylindrical, the glumes covered with long silky hairs	6. *Imperata.*
	Spikelets otherwise	xiv.
xiv.	Flowering glume with a dorsal awn or awn-like projection of the glume	xv.
	Flowering glume unawned (some may be awned in *Gastridium*)	xxi.
xv.	Outer glumes also awned	8. *Polypogon.*
	Flowering glume with 5 awns	17. *Pentapogon.*
	Flowering glumes normal	xvi.
xvi.	Outer glumes unequal, very short	9. *Microlæna.*
	Outer glumes equal, exceeding the flowering glume	xvii.
xvii.	Flowering glume closely enveloping, exceeding 3 lines. Awn much longer	xviii.
	Flowering glume under 3 lines. Awn short	xix.
xviii.	Flowering glume about 3 lines long, the awn inserted close below the apex	18. *Dichelachne.*
	Flowering glume 5-8 lines long. Awn terminal	16. *Stipa.*
xix.	Spikelets flat. Flowers in a dense cylinder	11. *Alopecurus.*
	Spikelets not flat. Inflorescence seldom dense	xx.
xx.	Pale absent	19. *Agrostis.*
	Pale present	20. *Deyeuxia*

xxi.	Empty glumes unequal	xxii.	
	Empty glumes equal or nearly so	xxiii.	
xxii.	One small glume outside the pair of empty ones	1.	*Panicum.*
	The empty pair of glumes very unequal	14.	*Anthoxanthum.*
xxiii.	Spikelets flat	xxiv.	
	Spikelets cylindric	xxv.	
xxiv.	Outer glumes winged, unawned	12.	*Phalaris.*
	Outer glumes with short awns, not winged	13.	*Phleum.*
xxv.	Spikelets stiff, 4-5 lines long, crowded in a dense cylinder	22.	*Psamma.*
	Spikelets under 3 lines	xxvi.	
xxvi.	Outer glumes polished, not consistently persistent after the fall of the fruit	32.	*Sporobolus.*
	Fruiting glume parting from the rhachis when the fruit is ripe, the outer empty glumes remaining persistently attached	xxvii.	
xxvii.	Outer glumes with a smooth, shining, enlarged base	21.	*Gastridium.*
	Pale absent	19.	*Agrostis.*
	Pale present	20.	*Deyeuxia.*
xxviii.	Panicle loose	xxix.	
	Panicle nearly cylindric	xxxiii.	
xxix.	Spikelet under 3 lines	xxx.	
	Spikelet 3-8 lines	xxxii.	
xxx.	Small, nearly white	23.	*Aira.*
	Pale and softly downy	24.	*Holcus.*
	Glumes dark	xxxi.	
xxxi.	Spikelets 2-flowered	25.	*Deschampsia.*
	Spikelets 3-flowered, the 2 lower ones male	15.	*Hierochloë.*
xxxii.	Flowering glume simple, but with a dorsal awn	27.	*Arrhenatherum.*
	Flowering glume with a pair of awn-like extensions besides the dorsal awn	29.	*Danthonia.*
xxxiii.	Dorsal awn as long as the glume	26.	*Trisetum.*
	Dorsal awn short or none	36.	*Kælaria.*
xxxiv.	Flowering glumes awned	xxxv.	
	Flowering glumes unawned	xxxviii.	
xxxv.	Awn dorsal. Glume with 2 terminal awn-like points	xxxvi.	
	Awn formed by the continuation of the glume	xxxvii.	
xxxvi	Flowering glumes all included in the outer empty pair	28.	*Danthonia.*
	Flowering glumes not enclosed	29.	*Amphibromus.*
xxxvii.	A minute lobe on each side of the awn. Inflorescence spreading	42.	*Bromus.*
	Awn terminal. Inflorescence a one-sided erect panicle	44.	*Festuca.*
xxxviii.	Spikelets much flattened	xxxix.	
	Spikelets not conspicuously flat	xli.	
xxxix.	Spikelets 3 or 4, unisexual	35.	*Distichlis.*
	Spikelets numerous, in dense clusters, forming a one-sided dense panicle	37.	*Dactylis.*
	Inflorescence loose	xl.	
xl.	Spikelets 1 inch long, hard	43.	*Ceratochloa.*
	Spikelets 4 lines. Glumes pale, hard, rather obtuse	39.	*Schedonorus.*

Spikelets under 4 lines. Glumes herbaceous, usually acute … … … … .. 44. *Festuca.*
xli. Spikelets with long silky hairs at the base … 34. *Phragmites.*
Spikelets short, broad, and nodding … … 41. *Briza.*
Spikelets otherwise. Glumes obtuse… … xlii.
xlii. Spikelets oblong, few-flowered … … 38. *Poa.*
Spikelets nearly linear, many-flowered .. 40. *Glyceria.*

1. PANICUM.

Spikelets small, 1-flowered. Outer empty glumes 3; the outer one small, sometimes very minute; next pair equal or unequal, enclosing the flowering glume, which hardens round the fruit.

Very common in both Hemispheres. There are about 60 species in Australia, two of which have been sparingly introduced into Tasmania, but more must inevitably follow.

Spikelets arranged in digitate spikes… … … 1. *P. sanguinale.*
Spikelets in a linear compound spike… … … 2. *P. gracile.*

1. P. SANGUINALE, *Linn.* Annual, creeping at the base, then erect. Leaves flat, short, and usually broad. Stem 1-2 feet. Spikelets about 1 line long, sessile or nearly so along the sides of the finger-like branches that arise singly towards the apex of the stem.

Occasionally found near centres of civilisation, introduced. Found in most parts of Australia, warm places of both Hemispheres; also in England.

2. P. GRACILE, *R. Br.* Branched at the base, erect, about 1 foot. Leaves shorter than the stem, narrow to rather broad. Spikelets narrow. Glumes acute, about ¾-1 line long, numerous, sessile, and shortly stalked, on short lateral branches that are erect and appressed, forming a continuous or interrupted, linear, spike like panicle, 2-4 lines long.

Near Launceston, introduced. It is a native of and distributed throughout Australia.

2. STENOTAPHRUM.

Spikelets with 1 perfect terminal flower and 1 rudimentary or male flower below it, each contained in a glume and pale, with two empty glumes below them; the spikelets arranged in small clusters of 2-4, sunk alternately in the side of an elongated rhachis, forming a linear inflorescence.

S. AMERICANUM, *Schrank.* A coarse creeping grass, forming a dense sward. Leaves rather short and broad, with broad flat sheaths. Flowering stem flat, 3-12 inches long. Spikelets about 2 lines long. *S. glabrum*, Trin.

A widely-dispersed tropical plant, introduced.

3. SPINIFEX.

Spikelets unisexual, collected in dense globular heads; male spikelets with 4 glumes, the 2 upper ones bearing flowers; female spikelets with 4 glumes, the upper one only bearing a mature flower, the next one containing a rudiment.

S. HIRSUTUS, *Lab.* A maritime plant, widely creeping in sand, more or less silky all over. Leaves about 1 foot long. Male clusters 1-2 inches diameter. Bracts of the fertile clusters forming a head of 4-6 inches diameter.

Common on the coast; also on the coast-line of Australia, New Zealand, New Caledonia, &c.

4. ZOYSIA.

Spikelet 1-flowered, small; pale small; with only one empty glume below the flowering glume, and much exceeding it. Inflorescence dense, spike-like, but the spikelets distributed all round the stem.

Z. PUNGENS, *Willd.* A small maritime plant, creeping in the sand. Leaves rather narrow, hard, pungent. Flowering stem a few inches high. Inflorescence about 1 inch long. Spikelets about 2 lines long. Outer glume completely enclosing the flower, polished.

Islands of Bass Straits. Extending through Eastern Australia and Asia.

5. HEMARTHRIA.

Spikelets in pairs; one containing a single terminal flower and 3 outer empty glumes, the lowest largest, the third and flowering glume and pale all small and hyaline; the second spikelet on a flat pedicel, and generally consisting of empty glumes, but sometimes with a rudimentary or perfect flower. Inflorescence linear.

H. UNCINATA, *R. Br.* Base creeping; stems 6 inches to 1 foot, simple, or branched at the base. Leaves narrow, flat, about 4-6 inches long, distichous. Spike slightly compressed, 2-4 inches long. Spikelets about 3 lines long, the sessile one developing seed, and the second glume adnate to the rhachis, and bearing a rudimentary hook. The normally pedunculate flower with its peduncle adnate to the rhachis, outer glume acute, second hooked, stamens and pistils apparently perfect.

> A variable grass. Possibly not distinct from *H. compressa*, R. Br. The common Tasmanian form from which I have written the above description differs from the type in the second glume of the sessile spikelet being attached along its back to the rhachis, in the second spikelet being really sessile and flower-bearing, and in the second glume being hooked instead of the first. The typical plant occurs throughout Australia, and is closely allied to Asian and South European forms. Often included in *Rottboellia*.

6. IMPERATA.

Spikelet 1-2-flowered. Glumes 4, the outer one largest; pale present; mostly clothed with long hairs, and partly sessile and partly pedunculate, in a compound, rather compact, spike-like panicle.

I. ARUNDINACEA, *Cyr.* An erect reed-like grass, 2-3 feet high. Leaves narrow, about as long as the stem. Inflorescence dense, about 6 inches long. Spikelets about 2 lines long, hidden by hairs.

Swanport. Widely distributed from Australia to Europe.

7. ANTHISTIRIA.

Spikelets 1-flowered, unisexual, clustered. Inflorescence of 1 female flower with 4 male spikelets in a whorl beneath, and 1 or 2 above it, some of them often rudimentary. Glumes in the rudimentary flowered spikelets 2, in the males 3, in the females 4, the fourth or flowering glume very narrow and elongated into a stiff awn, often 1 inch long, each cluster subtended by a short leaf-like bract.

A. CILIATA, *Linn.* Habit tufted or spreading. Leaves flat, narrow. Flowering stems usually 1 foot high. Inflorescence in rather dense flat panicles, about 1½ inch long. Spikelets about ⅓ inch long. *Themeda forskalii*, Hack.

Very common; also throughout Australia, and spreading to Asia and Africa.

8. POLYPOGON.

Spikelets 1-flowered, small. Flowering glume short, with a slender, thread-like, dorsal awn, pale short, and 2 outer empty glumes, each with a slender thread-like awn. Inflorescence a branched, rather dense, panicle.

Inflorescence very dense. Awns much exceeding
glume in length ... ... 1. *P. monspeliensis.*
Inflorescence loose. Awns about as long as or shorter
than glumes ... ... 2. *P. littoralis.*

1. P. MONSPELIENSIS, ***Desf.*** A small erect or sub-erect annual, seldom 1 foot high. Leaves flat. Inflorescence very dense, 1-3 inches long, awns very conspicuous. Spikelets about 1 line long, awns about 3 or 4 times as long.

Very common in damp places near the sea. Possibly introduced. Found in most temperate parts of the globe.

2. P. LITTORALIS, *Sm.* Perennial and creeping. Leaves rather short, flat, pointed. Stems mostly 6 inches to 1 foot high. Inflorescence loose, about 2 inches long. Spikelets about ¾ line long, awns of the outer glumes generally shorter than themselves. Flowering glume thin, and with a short or no awn.

Introduced. Bank of Derwent below Bridgewater. Widely distributed in the Northern Hemisphere.

9. MICROLÆNA.

Spikelets 1-flowered. Glumes 6, unequal, 2 outer very short, 3rd and 4th long, narrow, and awned, 5th and 6th shorter, all keeled. Stamens 2 or 4. Flowers normally in a loose panicle.

A small genus, closely allied to the common South African genus *Ehrharta.* Confined to Australia and New Zealand.

Outer glumes minute, with a tuft of hairs between
them and the 3rd glume ... ... 1. *M. stipoides.*
Outer glumes close to the 3rd glume ... ... 2. *M. tasmanica.*

1. M. STIPOIDES, *R. Br.* A tufted perennial. Leaves short, flat, acute. Stem usually about 2 feet, bearing a long, linear, mostly nodding, panicle. Spikelets about ¼ inch long, awns slender and twice as long. Outer persistent glumes minute, distant from the 3rd glume, with a tuft of hairs above them. *M. gunnii*, H., included. *Ehrharta stipoides*, Lab.

Very common; also throughout extra-tropical Australia and New Zealand.

2. M. TASMANICA, *H.* A tufted perennial. Leaves pale, flat, acute. Stems 6 inches to 2 feet, bearing a loose panicle 2-4 inches long. Spikelets 4-5 lines long, the awn 1-2 lines. Outer pair of glumes short, close to and overlapping the 3rd glume. Stamens 2. *Diplax tasmanica*, H.; *Ehrharta diarrhena*, F. v. M.

Common on mountains and many lowland situations in Western and South-western Tasmania.

> Var. *sub-alpina.* Similar, but smaller. Panicle close, linear. Spikelets about 3 lines long. In some forms with but 1 stamen. Common on the mountains within the range of the type.

10. TETRARRHENA.

Spikelets 1-flowered. Glumes 6, the two outer ones small and persistent, 3rd and 4th nearly equal, the 4th usually the larger, 5th and 6th smaller, all rigid, but unawned. Stamens 4. Inflorescence a simple spike.

Limited to Australia. Very close to and often included in *Ehrharta.*

Glumes obtuse.
Leaves short, broad ... . 1. *T. distichophylla.*
Leaves narrow ... ... 2. *T. juncea.*
Some glumes acute ... ... 3. *T. acuminata.*

1. T. DISTICHOPHYLLA, *R. Rr.* A creeping perennial. Leaves mostly 1 inch long, flat, acute, distichous. Stems 6 inches to 1 foot, leafy in the lower part.

bearing a short spike about 1 inch long. Spikelets shortly stalked, about 2 lines long, glumes obtuse. *Ehrharta distichophylla*, Lab.

Common, especially in wet situations; also in Victoria.

2. T. JUNCEA, *R. Br.* Stems long, slender, often spreading many feet in the undergrowth. Leaves narrow, not as rigid as in the last species. Spikelets shortly stalked or sessile, in a spike about 1 inch long. Glumes 2 lines long, obtuse. *T. tenacissima*, Nees.; *Ehrharta juncea*, Spreng.

Circular Head, Black River; also in Victoria.

3. T. ACUMINATA, *R. Br.* Stem long, slender, spreading in undergrowth. Leaves short, broad, acute. Spikelets very shortly stalked. Spike about 1 inch long. Spikelets about 4 lines. Fourth glume very acute, and, together with the third, hard and longitudinally ribbed. *Ehrharta acuminata*, Spreng.

Rather common in swampy situations; also in Victoria.

11. ALOPECURUS.

Spikelet 1-flowered. Glumes 3, outer pair empty, flat, keeled, enclosing the flower. Flowering glume rather shorter, bearing a fine awn on the back. Pale none. Inflorescence a dense cylinder.

Spikelet 2-3 lines long, awn much longer ... ... 1. *A. pratensis.*
Spikelet 1-1½ line long, awn no longer ... ... 2. *A. geniculatus.*

1. A. PRATENSIS, *Linn.* Perennial. Leaves flat. Stems about 2 feet high. Inflorescence dense, 1-3 inches long. Outer glumes about 2½ lines long, ciliated on the keel. Flowering glume nearly as long. Awn about 4 lines long.

Introduced. Common in and near cultivations.

> *A. agrestis*, L., differing in being annual, with a more slender inflorescence and the empty glumes not ciliate, has also been recorded.

2. A. GENICULATUS, *Linn.* Similar to *A. pratensis*, but of smaller habit. Inflorescence narrower, 1-2 inches long. Spikelets about 1 line long. Outer glumes ciliate on the keel. Awn about 1 line long.

Introduced. Hardly as common as the last, but more diffused.

12. PHALARIS.

Spikelet 1-flowered. Glumes 3, outer pair empty, flat. Flowering glume short, unawned. Pale present. Inflorescence dense, ovoid.

P. MINOR, *Retz.* Annual. Stems erect, 1-2 feet high, leafy. Leaves flat; ligule large. Inflorescence 1-2 inches long, ovoid to cylindrical. Spikelets about 2 lines long, white striped with green. Seed contained in the hardened polished glume.

Introduced. Common.

13. PHLEUM.

Spikelet 1-flowered. Glumes 3; outer pair flat, keeled, extended above in an abrupt awn; flowering glume short, obtuse, unawned. Pale present. Inflorescence dense, cylindrical.

PHLEUM PRATENSE, *Linn.* Annual, very similar in size and habit to *Alopecurus pratensis*, only the leaves are minutely roughened on the margins. Inflorescence narrow, dense, 2-4 inches long. Spikelets about 1½ line long. Outer glumes not ciliated on the keel. Awn usually much shorter than the glume.

Introduced. Common near cultivation.

14. ANTHOXANTHUM.

Spikelets 1-flowered. Glumes 5; outer one thin, about 1½ line long: second rigid, 3-4 lines long; next pair very short, equal, each with a filiform dorsal awn: flowering glume still smaller, very obtuse. Pale present. Stamens 2. Inflorescence ovate, rather compact.

A. ODORATUM, *Linn.* Perennial. 1-2 feet high. Leaves rather short, flat. Inflorescence 1-2 inches long.

Introduced. Very common.

15. HIEROCHLOË.

Spikelet 3-flowered, the upper one perfect, the two lower ones male, all apparently on the same level. Glumes 6; outer pair rather unequal, empty; next two each containing a male flower, 5th glume enclosing the 6th or flowing glume. Inflorescence a loose spreading panicle. Scented with coumarin.

Widely distributed in cool situations in both Hemispheres.

Outer glumes 2½-3 lines long, as long as the spikelet ... 1. *H. redolens.*
Outer glumes 1½ line long, nearly as long as the spikelet ... ... 2. *H. fraseri.*
Outer glumes about 1 line long, much shorter than the spikelet ... ... 3. *H. rariflora.*

1. H. REDOLENS, *R. Br.* A tufted perennial. Stems about 3 feet high. Leaves long, broad, flat. Panicle about 1 foot long, spreading, but the spikelets rather clustered. Outer glumes thin, shining, 2-3 lines long; 3rd and 4th keeled, ciliated, and bearing a very short awn; 5th and 6th rather obtuse and generally hairless. *H. antarctica*, R. Br.

Very common, especially in damp places on hills; also in Victoria, New South Wales, and New Zealand. Widely distributed in southern temperate countries.

2. H. FRASERI, *Hook.* A tufted perennial, similar to *H. redolens* in habit and inflorescence, but smaller. Stems about 1 foot high. Inflorescence rather compact. Spikelets about 1½-2 lines long. Outer glumes purple, with a scarious tip; inner glumes exceeding them, the 3rd and 4th slightly ciliated, and bearing a short, fine, dorsal awn. *H. borealis*, in Hook. "Fl. Tas."; *H. alpina*, F. v. M.

Common on mountain-tops.

3. H. RARIFLORA, *Hook.* A tall, slender, branching perennial, often 2-3 feet high. Leaves flat, tapering to a point. Inflorescence usually long and very loose. Spikelets about 1½ line long. Outer glumes unequal, very much shorter than the flowering glumes, which are nearly glabrous, obtuse, and unawned.

Widely distributed in the northern part of the Island, also in New South Wales and Victoria.

16. STIPA.

Spikelets 1-flowered. Glumes 3, outer pair persistent and longer than the flowering glume. Flowering glume rigid and rolled round the flower, bearing at its apex a long, filiform, twisted awn, and typically without terminal lateral lobes. Pale narrow, enclosed in the glume. Inflorescence a very loose to rather dense panicle.

Wide distribution, excepting America.

Flowering glumes with minute membranous lobes by the side of the awn.
  Leaves cylindrical, rigid, acute ... ... 1. *S. teretifolia.*
  Leaves flat or with involute margins ... ... 2. *S. flavescens.*
Flowering glumes without terminal lateral lobes.
  Flowering glume under 3 lines long ... ... 3. *S. setacea.*

Flowering glumes 4-5 lines long.
Outer glumes ragged at apex ... ... 4. *S. pubescens.*
Outer glumes acute ... ... 5. *S. semibarbata.*

S. elegantissima, Lab., was, by a probable error, recorded from Tasmania.

1. S. TERETIFOLIA, *Steud.* A densely-tufted rigid shore plant, 2-3 feet high. Leaves rigid, cylindrical, sharply pointed. Panicle rather close, about 6 inches long. Outer glumes acute, the longest about $\frac{3}{4}$ inch long. Flowering glume hairy, nearly $\frac{1}{2}$ inch long, the lateral lobes often concealed, but conspicuous. Awn 1-$1\frac{1}{2}$ inch long. *Dichelachne stipoides*, Hook.

Very common on shores: also in Victoria, South Australia, West Australia, and New Zealand.

2. S. FLAVESCENS, *Lab.* A rather slender perennial, about 2 feet high. Leaves flat, mostly narrow and glabrous or nearly so, convolute when dry. Panicle narrow and dense, 6-9 inches long Outer glumes acute, about $\frac{1}{2}$ inch long. Flowering glume hairy, about $\frac{1}{4}$ inch long, lateral lobes minute. Awn about $1\frac{1}{2}$ inch long.

Widely distributed in the north, but hardly common; also throughout Southern Australia.

3. S. SETACEA, *R. Br.* Slender, often 2 feet high. Basal leaves short, filiform; stem-leaves broader. Panicle very loose. Outer glumes thin, acute, $\frac{1}{2}$ inch long. Flowering glume $2\frac{1}{2}$-3 lines long, villous. Awn often 2 inches long, slender, and usually glabrous.

Found occasionally in most localities, but commoner in the north; also throughout Australia.

The Tasmanian form approaches small forms of *S. semibarbata.*

4. S. PUBESCENS, *R. Br.* Stems 2-3 feet high, from a persistent base. Basal leaves very narrow, convolute, pubescent; stem-leaves flat when fresh, nodes pubescent. Inflorescence very loose in flower, denser in fruit. Outer glumes $\frac{1}{2}$-$\frac{3}{4}$ inch long, thin, apex convex, but torn when the flower opens. Flowering glume $\frac{1}{4}$-$\frac{1}{2}$ inch long, pubescent. Awn finely pubescent to plumose, about 2 inches long.

Very common. Throughout extra-tropical Australia.

> Var. *aphylla.* Stems wiry, from a persistent base. Leaves reduced to brown sheaths, and very small shrivelled laminæ. Panicle very loose. Outer glumes $\frac{1}{2}$ inch long. Flowering glume $\frac{1}{4}$ inch long. Dry hills in Southern Tasmania.

5. S. SEMIBARBATA, *R. Br.* Generally a larger plant in habit and detail to the last, but not truly distinct. Nodes pubescent in Tasmanian forms. Panicle loose in flower, dense in fruit. Outer glumes about $\frac{3}{4}$ inch long, acute. Flowering glumes $\frac{1}{3}$-$\frac{1}{2}$ inch long. Awn plumose.

Very common. Similar distribution to *S. pubescens.*

17. PENTAPOGON.

Spikelets 1-flowered. Glumes 3, outer pair persistent. Flowering glume rolled round the flower, and terminating in 4 filiform lobes, and bearing a fine twisted awn inserted on the back, above the middle. Inflorescence a rather dense panicle.

A genus of one species, confined to Australia.

P. BILLARDIERI, *R. Br.* Leaves rather short, narrow, usually copiously pubescent. Stem 1-2 feet high. Panicle 2-4 inches long. Spikelets $\frac{1}{4}$-$\frac{1}{2}$ inch long without the awn.

Very widely distributed: also in Victoria, South Australia, and New South Wales.

Var. *parviflorus*. Similar, but smaller in all details. Panicle about 1 inch long. Spikelets about 2 lines. Common in Southern Tasmania, and occurring at all altitudes.

18. DICHELACHNE.

Spikelets 1-flowered. Glumes 3, outer pair persistent. Flowering glume wrapped round the fruit, ending in 2 small membranous lobes, and bearing a fine dorsal awn near the end. Inflorescence a dense or loose panicle.

The genus, which consists of the two following species, differs from *Stipa* merely in the smaller size of the spikelets, the less indurated state of the flowering glume, and the conspicuous terminal lobes.

Panicle dense. Awns hiding the spikelets ... ... 1. *D. crinita.*
Panicle loose ... ... 2. *D. sciurea.*

1. D. CRINITA, *Hook.* Leaves flat, mostly on the stem, 2-3 lines broad. Stem 2-3 feet high. Panicle dense, about 6 inches long, the spikelets nearly hidden by the long awns. Outer glumes very narrow, acute, about 3 lines long. Flowering glume about 2 lines long, the tip white, entire. Awn about 1 inch long, inserted about ½ line below the tip. *Stipa dichelachne*, Steud.

Very common; also throughout Australia and New Zealand.

2. D. SCIUREA, *Hook. f.* Leaves short, narrow, with involute margins. Stems 1-2 feet high. Panicle about 4-5 inches long, very loose and spreading in Tasmanian plants. Outer glumes narrow, acute, about 3 lines long. Flowering glume about 2 lines long, scabrid, the tip white, very short and bifid. Awn ½-¾ inch long, inserted close to the tip. *Stipa micrantha*, Cav.

Very common; also extra-tropical Australia and New Zealand.

19. AGROSTIS.

Spikelets small, 1-flowered. Glumes 3; 2 outer ones persistent, unawned; flowering glume loosely enveloping the flower with or without a dorsal awn. Pale rudimentary or none. Panicle loose.

Distribution world-wide.

Flowering glume unawned.
  Panicle not spreading; pale present ... ... 1. *A. vulgaris.*
  Panicle very spreading; pale none ... ... 2. *A. scabra.*
Flowering glume awned; pale none ... ... 3. *A. venusta.*

1. A. VULGARIS, *With.* A creeping perennial. Erect stems about 1 foot high. Leaves narrow, flat. Panicle about 3 inches long, seldom spreading. Spikelets under 1 line long. Flowering glume short, obtuse, unawned. Pale about half as long as the glume. *A. alba*, Linn.

Introduced. Common.

2. A. SCABRA, *Willd.* Tufted. Stems slender, a few inches to 2 feet high. Leaves filiform in the smaller, flat in the larger, forms. Panicle of few to very numerous spreading filiform branches. Spikelets ¼-1 line long. Outer glumes acute, scabrid on the keel. Flowering glume shorter, obtuse, unawned. Pale none. *A. parviflora*, R. Br.

Very common in shady places.

> Large forms, often referred to as var. *elatior*, are indistinguishable from *Deyeuxia æquata* except in the absence of the pale.
>
> This form is common in swampy places, and occurs also in New South Wales and Victoria, Queensland, South Australia, and North America.

3. A. VENUSTA, *Trin.* Exactly similar in habit and detail to the small forms of *A. scabra*, but the flowering glume bears a fine, twisted, dorsal awn.

Very common, chiefly in shaded places; also in Victoria, West Australia, South Australia, and New South Wales.

20. DEYEUXIA.

Spikelets small, 1-flowered. Glumes 3; 2 outer ones acute, unawned, and persistent. Flowering glume acute or erose, with or without a dorsal awn. Pale well developed, and the rhachis usually developed beyond it in the form of a hairy bristle, which sometimes bears a rudimentary or, perhaps, perfect flower, in some instances even a third flower is developed. *(D. montana.)*

The genus appears to be a continuation of *Agrostis* in the direction of *Calamagrostis*.

Flowering glume unawned or the awn very small.
Flowering glume about as long as the outer glumes.
Panicle very spreading. Awn none ... ... 1. *D. æquata.*
Panicle linear, rarely spreading. Awn minute, attached near the top ... ... 6. *D. scabra.*
Flowering glume much exceeding the outer glumes.
Awn small, terminal ... ... 7. *D. gunniana.*
Flowering glume with a long, fine, dorsal, twisted awn.
Panicle spreading, with long capillary branches.
Flowering glume villous ... ... 2. *D. forsteri.*
Flowering glume glabrous ... ... 3. *D. billardieri.*
Panicle linear, densely cylindrical; if spreading, branches short.
Panicle linear ... ... 5. *D. montana.*
Panicle dense or shortly spreading ... ... 4. *D. quadriseta.*

1. D. ÆQUATA, *Benth.* Tufted. Leaves narrow, flaccid, flat. Stems slender 1-2 feet high. Panicle about 6 inches long, with long, spreading, capillary branches. Outer glumes acute, about $\frac{3}{4}$ line long. Flowering glume rather shorter, polished, unawned. Pale nearly as long as the glume. Bristle generally distinct. *Agrostis æquata*, Nees.

Circular Head, Trial Harbour. Probably widely distributed, but overlooked.

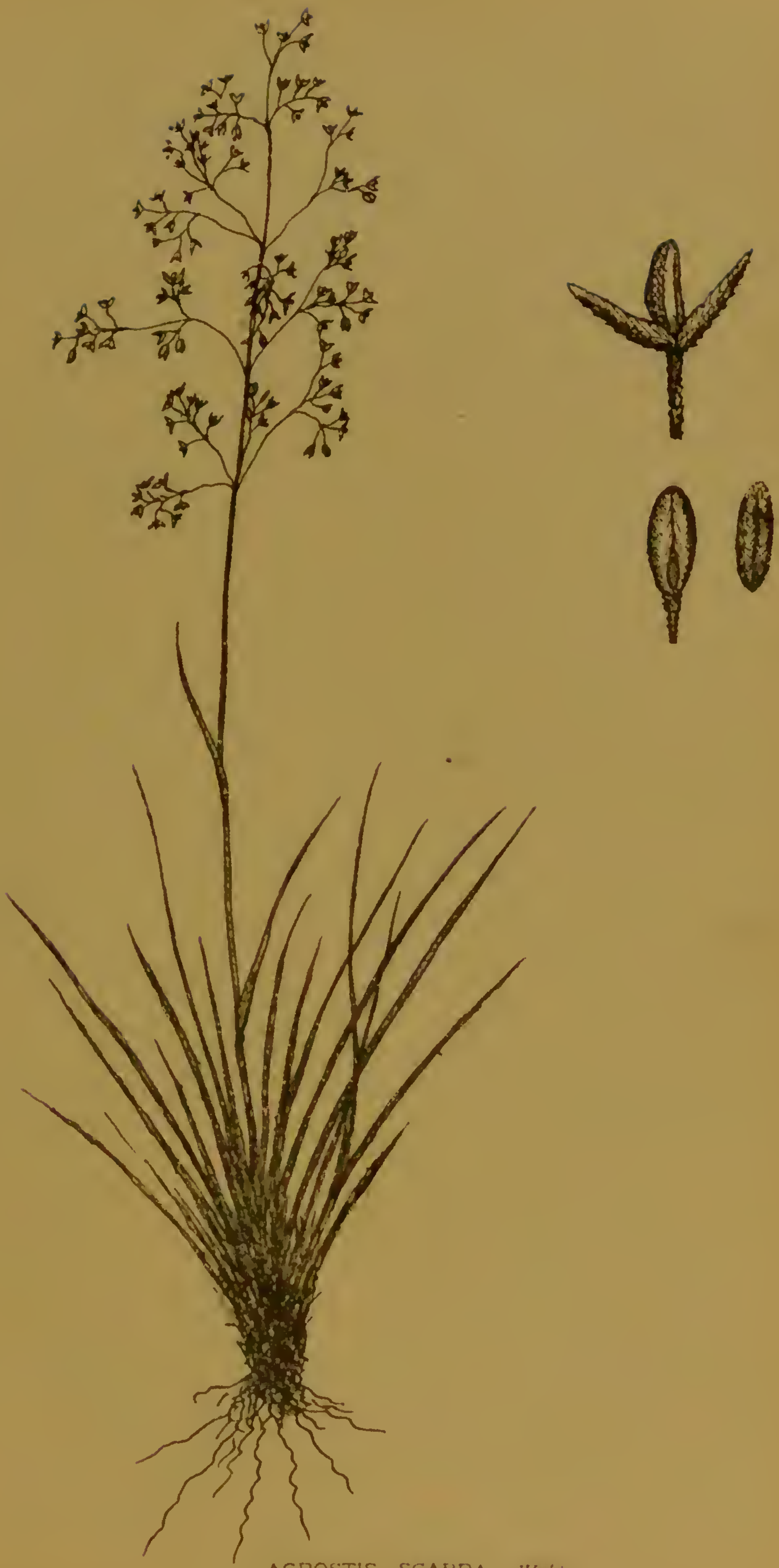
2. D. FORSTERI, *Kunth.* Variable in habit, usually tufted. Leaves flat, and about 2 lines broad in the largest forms, filiform in the smallest. Stem slender, 6 inches to 2 feet high. Panicle with spreading capillary branches, a few inches to 1 foot long. Outer glumes acute, 1-2 lines long. Flowering glume much shorter, hairy, bearing a fine, twisted, dorsal awn. Pale nearly as long. Bristle present. *Agrostis forsteri*, R. et S.; *A. æmula*, R. Br.; *A. solandri*, F. v. M.

Very common: also throughout Australia and New Zealand.

3. D. BILLARDIERI, *Kunth.* A very similar plant to the last, but of more robust habit, though not tall. Leaves flat. Stems from a few inches to 1 foot high, with a large leaf at the base of the panicle. Panicle large and spreading. Outer glumes very acute, 2-3 lines long. Flowering glume shorter, glabrous, terminating with 2 filiform points, and bearing a fine, twisted, dorsal awn. Pale rather short. Bristle very conspicuous. *Agrostis billardieri*, R. Br.; *A. solandri* (partly), F. v. M.

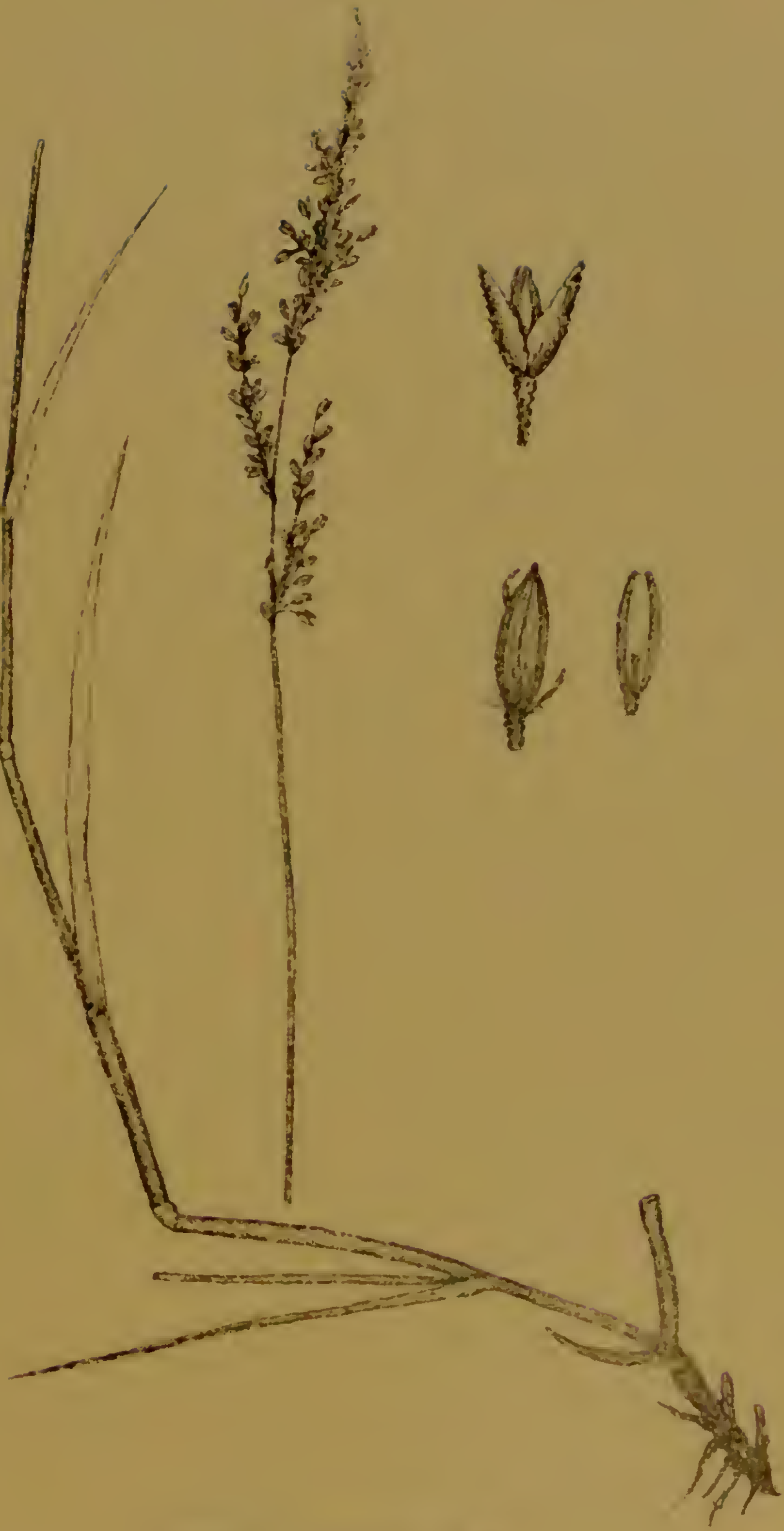
Common on coasts. South-Eastern Australia to New Zealand

4. D. QUADRISETA, *Benth.* A most variable grass. Leaves narrow and convolute in the small forms, flat and 3 lines wide in the large ones. Stems slender to robust, 9 inches to 3 feet high, often decumbent at the base. Panicle from loose and interrupted and spreading when in flower to dense and cylindrical, 1-4 inches long. Outer glumes very acute, $1\frac{1}{2}$-3 lines long. Flowering glume about



AGROSTIS SCABRA. *Willd*

[illegible]



DEYEUXIA SCABRA. *Benth.*

[illegible]

as long or shorter, with a 2 or 4-toothed apex, and bearing a fine dorsal awn inserted from near the top to near the base, without reference to size or habit of infloresecence. *Agrostis quadriseta*, R. Br., *D. minor*, Benth., and *D. frigida*, F. v. M., included.

Very common; also throughout extra-tropical Australia and New Zealand.

5. D. MONTANA, *Benth.* Tufted. Leaves filiform in small forms, flat and broad in larger ones. Stems 9 inches to 2 feet high. Panicle interupted, loose but linear in the type, but in some luxuriant forms the branches long and spreading. Outer glumes acute, about 2 lines long. Flowering glume nearly as long, 2-4-toothed, with a fine dorsal awn attached near the base. Pale nearly as long as the glume. Bristle always conspicuous, some spikelets often bearing a second flower, and rarely a third one. *Agrostis montana*, R. Br.

Common; also in Victoria and South Australia.

6. D. SCABRA, *Benth.* Tufted, and very variable in size. Leaves in smallest forms slender and filiform, in the largest flat and 2 lines diameter. Stems from a few inches to 3 feet high. Panicle loose, spreading to linear, 1-6 inches long. Outer glumes acute, 1-2 lines long. Flowering glume about as long, with a very minute dorsal awn attached near the apex. *A. scabra*, R. Br., *A. contracta*, F. v. M., included.

Very common; also throughout Eastern Australia.

> Tasmanian forms with unusually long awns appear to connect this and the last.

7. D. GUNNIANA, *Benth.* Tufted or with a slightly creeping base. Basal leaves short and filiform; stem-leaves rather broader. Stem about 6 inches high. Panicle rather loose, 1-2 inches long. Outer glumes obtuse, about ¼ line long. Flowering glume twice as long, polished, obtuse, but with a short awn-like point about [illegible] as long as the glume. Pale nearly as long as the glume. Bristle present.

Zeehan and other localities on West Coast.

21. GASTRIDIUM.

Spikelets small, 1-flowered. Glumes 3, outer pair persistent, polished, and swollen at the base. Flowering glume loosely enclosing the flower. Panicle dense.

Northern Hemisphere.

G. LENDIGERUM, *Beauv.* Tufted erect annual. Leaves flat, few. Stems 6 inches to 1 foot high. Panicle dense, ovate to cylindrical, 1-3 inches long. Outer glumes 2 lines long, acute. Flowering glume very short, nearly globose, with a fine, filiform, dorsal awn. Pale present.

Introduced. Berriedale.

22. PSAMMA.

Spikelets 1-flowered. Glumes 3, outer pair persistent, acute, compressed, scarious. Flowering glume stiff, scarious, unawned. Pale about as long. Panicle dense.

Northern Hemisphere.

P. ARENARIA, *Beauv.* Rhizome creeping in the sand. Stems 2-3 feet high. Leaves narrow, concave, stiff. Panicle dense, about 6 inches long. Spikelets about 5 lines long. Flowering glume nearly as long. Pale nearly as long, with a bristle-like extension of the rhachis. *Ammophila arundinacea.*

Introduced. On sea-shores.

23. AIRA.

Spikelets small, 2-flowered. Outer pair of glumes empty, thin, scarious, persistent. Flowering glumes similar, but smaller, and with a fine dorsal awn. Panicle loose, generally spreading.

Northern Hemisphere.

A. CARYOPHYLLEA, *Linn.* A small tufted annual. Leaves short and slender. Stems about 6 inches high. Panicle 1 or 2 inches long, loose and spreading. Outer glumes about 1½ line long, shining, acute. Flowering glumes shorter, bifid, with a fine dorsal awn. Pale about as long.

Very common. Occurring throughout temperate regions of the globe.

24. HOLCUS.

Spikelets 2-flowered; lower one perfect, upper one staminate only. Glumes 4; 2 outer empty ones flattened; flowering glumes shorter, the upper one with a short dorsal awn. Panicle rather loose.

Northern Hemisphere.

H. LANATUS, *Linn.* A creeping perennial, softly downy all over. Stems 1-2 feet high. Leaves flat, broad. Panicle rather loose, 2-4 inches long. Outer glumes pale, about 2 lines long. Flowering glumes very much shorter.

Very common. Introduced.

25. DESCHAMPSIA.

Spikelets 2-flowered, the upper one protruding from the empty glumes. Outer glumes thin, shining, flattened. Flowering glumes shorter, but the upper one raised on a conspicuous stalk, each with a dorsal awn attached near the base. Panicle loose.

Common in temperate parts of both Hemispheres.

D CÆSPITOSA, *Beauv.* Perennial, tufted. Stems thick, often 4 feet high. Leaves narrow, chiefly basal. Panicle loose, 6 inches to 1 foot long. Spikelets shining. Outer glumes about 2 lines long, acute or truncate. Flowering glumes shorter, 4-toothed, their stalks densely hairy. Awn about as long as the glume. *Aira cæspitosa*, Linn.

Common in swamps. Found in temperate climates in most parts of the world.

26. TRISETUM.

Spikelets 2, rarely 3-flowered, the rhachis elongated between each, and produced beyond them. Outer empty glumes keeled, acute, shining. Flowering glumes scarious, with a fine dorsal awn. Panicle dense or loose.

Alpine in both Hemispheres.

T. SUBSPICATUM, *Beauv.* Tufted. Stems about 1 foot high. Leaves flat, usually softly pubescent, rather broad. Panicle dense, about 2 inches long; if longer, more or less interrupted. Spikelets about 3 lines long, pale, shining. Flowering glumes exceeding the outer ones. Awn short.

On most mountains in northern and central districts. Widely spread in cold climates of both Hemispheres.

27. ARRHENATHERUM.

Spikelets few-flowered (1-3). Outer empty glumes long, acutely pointed. Flowering glumes shorter, one or all with a fine dorsal awn. Panicle very spreading to linear.

A. AVENACEUM, *Beauv.* A creeping perennial. Stems 2-3 feet high. Leaves flat. Panicle loose, but generally linear, 6 inches to 1 foot long. Outer glumes about 4 lines long, unequal. Flowering glumes 2, the lower one normally only bearing stamens, the upper one perfect, about 3 lines long, the lower one with a fine dorsal awn, the upper one awnless. *Avena elatior*, Linn.

Not common, but widely dispersed. Distributed in both Hemispheres. Introduced.

Var. *bulbosa*. Similar, but the rhizome developing a succession of spherical bulbs, and both flowers perfect and apparently fertile. Introduced. Bellerive.

AVENA SATIVA, *Linn.* The wild degenerated state of the oat of cultivation shows a disposition to become naturalised.

28. DANTHONIA.

Spikelet few or many flowered. Outer pair of empty glumes as long as or longer than the spikelet, acute. Flowering glume terminating in 2 subulate points, and bearing a fine, twisted, dorsal awn attached near the top. Inflorescence a loose or rather dense panicle or raceme.

A genus of wide distribution in temperate parts of both Hemispheres

Small. Flowers in spikelet, 2-4 ... 2 *D. pauciflora.*
Flowers usually many ... 1 *D. penicillata.*

1. D. PENICILLATA, *F. v. M.* Very variable in size and detail. Leaves setaceous, convolute to flat, and 2 lines broad. Stem from 4 inches to 2 feet high. Inflorescence a loose or rather dense raceme or panicle. Spikelets ¼ to nearly ¾ inch long. Outer glumes acute, enclosing the flowers. Flowering glumes 3 to about 8, 2-4 lines long without the awns, ending in 2 long lanceolate or filiform lateral processes and a fine, dorsal, twisted awn, usually bearing ciliate hairs on the margin or back.

Very common; also throughout Australia.

The extreme variability of the plant has given rise to many specific names. In Tasmania the forms are too numerous, and run one into another, to warrant them being kept separate. The following are the more marked:

Var. *pallida*. About 2 feet high. Leaves subulate. Panicle dense, 3-6 inches long. Outer glumes under ½ inch. Flowering glumes 3 or 4, hairy on margin and a few tufts on the back. Lateral lobes lanceolate. *D. pallida*, R. Br.

Var. *racemosa*. Stems weak, 1-2 feet. Leaves narrow, flat. Spikelets not numerous, in a simple raceme or linear panicle, 2-3 inches long. Outer glumes about ½ inch long, acute. Flowering glumes generally numerous, glabrous or nearly so. Lateral lobes long, filiform. Awn about 8 lines long. *D. racemosa*, R. Br.

Var. *pilosa*. Differing from the last in little beyond a more tufted habit and a dense panicle, but very variable. The pilose condition untrustworthy. *D. pilosa*, R. Br.

Var. *semiannularis*. Usually robust and 1-2 feet high. Leaves from nearly filiform to flat, and 2 lines broad. Panicle dense, 2-4 inches long. Outer glumes 5-9 lines long, acute. Flowering glumes usually numerous, about 2-4 lines long, very hairy, some of the tufts forming a ring just below the awn. Lateral processes long, filiform. Awn about ¾ inch long. *D. semiannularis*, R. Br.

Var. *setacea*. 6-9 inches high. Leaves short, filiform. Panicle dense, about 1-1½ inch long. Spikelets slender, about 4 lines long. Outer glumes narrow, acute. Flowering glumes about 4 or 5, small, hairy, but usually without the ring of *semiannularis*. Lateral lobes long and very slender. Awn rather longer. *D. setacea*, R. Br.; *D. subulata*, Hook.

2. D. PAUCIFLORA, *R. Br.* 1-3 inches high. Leaves filiform, rigid. Spikelets few, about 3 lines long. Outer glumes rather broad. Flowering glumes 2-4, small, usually copiously hairy, and often with a very distinct ring. Lateral lobes short, broadly lanceolate. Awn rather longer.

Very common, alpine; also found in lowland pastures; also Victoria, New South Wales, and New Zealand.

29. AMPHIBROMUS.

Spikelets several-flowered. Outer glumes much shorter than the spikelets. Flowering glumes terminating in 2 simple (truncate or bifid) lobes. Awn slender, twisted, inserted between and below the lateral lobes.

The genus contains but one species.

A. NEESII, *Steud.* Mostly 1-2 feet high. Leaves few, rather narrow. Panicle long and loose. Spikelets on long slender stalks, each about ¼-½ inch long, and 6-8-flowered. Flowering glume scabrid, the lateral lobes with 2 ribs that usually are prolonged into filiform processes. *Danthonia nervosa* and *Archeri*, Hook. "Fl. Tas."

Not common, but widely distributed throughout the Island; also throughout extra-tropical Australia.

30. ECHINOPOGON.

Spikelets 1-flowered, the rhachis shortly prolonged; collected into a dense head. Outer empty glumes 2. Flowering glumes with 2 short lateral lobes and a straight, awn-like, central lobe.

Containing but one species.

E. OVATUS, *Beauv.* Tufted, erect, about 1 foot high. Leaves flat, 2-4 lines broad, hispid to scabrid. Inflorescence ovoid to globular, dense, ½-1½ inch long. Spikelets numerous, rigid, about 2 lines long. Outer glumes indurated, hirsute. Flowering glume about 1¼ line long, the lateral lobes short, awn ⅓ inch long, scabrid. *Cinna ovata*, Kunth.

Very common; also throughout Australia and New Zealand.

31. CYNODON.

Spikelets 1-flowered, minute, sessile, in 2 rows along one side of a rhachis. Inflorescence of few linear spikes, arising from a common centre. Outer empty glumes 2. Flowering glume broad and keeled.

Common in temperate climates.

C. DACTYLON, *Pers.* Creeping and rooting at the nodes. Leaves short, narrow, flat. Spikes 3-5, slender, about 2 inches long. Spikelets crowded, each about 1 line long. Outer glumes shorter than the flowering glume.

Very common. Possibly indigenous, but introduced near centres of population. Common to warm and temperate climates.

32. SPOROBOLUS.

Spikelets 1-flowered, minute, in a cylindrical dense panicle. Outer empty glumes 2, smooth, polished. Flowering glume broad and polished. Fruit an utricle.

Tropical and temperate parts of both Hemispheres.

S. VIRGINICUS, *Kunth.* An ascending or erect simple or branched grass, from a few inches to 2 feet high. Leaves short, rigid, and distichous. Inflorescence dense, about 1 inch long, dark. Spikelets numerous, about 1 line long, shining. Glumes nearly equal Pale rather longer than the flowering glume.

George's Bay, South Esk River; also throughout Australia. It occurs in Asia, Africa, and America.

33. CYNOSURUS.

Spikelets 2-5-flowered, in sessile clusters, along one side of a common rhachis; the outer spikelets of each cluster consisting of glumes only. Glumes awned or very acute.

A European genus.

C. CRISTATUS, *Linn.* Erect, about 1 foot high. Leaves short, narrow, flat. Spike 1-2 inches long, dense. Spikelets flat, about 1½ line long. Glumes acute, or some bearing very short awns.

Introduced. Very common.

34. PHRAGMITES.

Spikelets 3 or more flowered, in a much-branched plumose panicle, the rhachis bearing long silky hairs between the flowers. Outer glume short, empty; second longer, empty; third still longer, very narrow, with a long point and enclosing a male flower; above this three or four very long, slender, flowering glumes distant along the rhachis.

World-wide genus.

P. COMMUNIS, *Trin.* Creeping and tufted in mud. Stems many feet high. Leaves flat, rather broad. Panicle about 1 foot long. Spikelets very numerous, about ½-¾ inch long, slender when in flower, widely open when in fruit.

Common on river-banks, &c. Of world-wide distribution.

35. DISTICHLIS.

Spikelets several-flowered, few, flattened, diœcious, in small terminal panicles. Glumes acute.

The genus contains but one species.

D. MARITIMA, *Rafin.* Tufted or creeping, about 6 inches high. Leaves short, rigid, distichous. Spikelets few, in a close panicle, about ½ inch long. *Festuca distichophylla*, Hook. "Fl. Tas."

Very common on coasts; also South Australia, Victoria, New South Wales, and extending to South America.

36. KŒLERIA.

Spikelets 2 or more flowered, small, flat, numerous, in a dense cylindrical panicle. Glumes acute or awned.

A northern temperate genus.

Spikelets nearly ¼ inch long . ... 1. *K. cristata.*
Spikelets barely 2 lines long .. 2. *K. phleoides.*

1. K. CRISTATA, *Pers.* Perennial, about 1 foot high or rather more. Leaves ciliate, short, flat, and thin. Inflorescence about 2 inches long. Spikelets about ¼ inch long, and generally 4 or 5-flowered. Glumes acute.

Macquarie Plains. Introduced. It also occurs in New South Wales and Victoria. Very widely distributed in the Northern Hemisphere.

2. K. PHLEOIDES, *Pers.* A small pubescent annual, 6 inches to 1 foot high. Leaves flat, thin. Inflorescence very dense, 1-2 inches long. Spikelets about 2 lines long and 5-7-flowered, the larger glumes with a short fine awn.

George's Bay, Bass Strait. Introduced. It also occurs in New South Wales and South Australia. A common northern plant.

37. DACTYLIS.

Spikelets several-flowered, flat, crowded in clusters on one side of peduncle, the whole in a dense or loose one-sided inflorescence.

The genus contains but one species, of north temperate distribution.

D. GLOMERATA, *Linn.* A coarse tufted grass, 2-3 feet high. Leaves flat, with serrated edges. Inflorescence from 2 inches to 1 foot long. Clusters few or numerous, on short or long peduncles, mostly about ¾ inch diameter. Spikelets flat, 3-5-flowered, about 4 lines long. Glumes rigid, keeled, acute or shortly awned.

Introduced.

38. POA.

Spikelets few to many flowered, small, slightly flattened, in linear to loose panicles. Glumes usually obtuse.

A large genus, of world-wide distribution.

Spikelets in a rigid linear panicle ... 6. *P. rigida.*
Stems flat ... ... 5. *P. compressa.*
Panicle loose, or at least not rigid. Stem cylindrical.
  Leaves slender, with involute margins.
    Panicle long, linear Glumes softly pubescent 2. *P. billardieri.*
    Panicle spreading or clustered. Glumes nearly glabrous ... ... 1. *P. cæspitosa.*
  Leaves flat.
    Panicle linear, but loose ... ... 3. *P. saxicola.*
    Panicle spreading.
      Short. Glumes obtuse, with a comparatively broad scarious margin .. .. 4. *P. annua.*
      Tall. Glumes acute.
        Glumes with a few woolly hairs ... ... 7. *P. pratensis.*
        Glumes with well-marked lateral nerves ... 8. *P. trivialis.*

1. P. CÆSPITOSA, *Forst.* Most variable in size and habit, generally tufted, usually more or less scabrous all over. Leaves slender, harsh, usually filiform, with involute margins, rarely (in shady situations) rather flat, always shorter than the stems. Stems 6 inches to 2 feet. Panicle loose, with distant spreading branches to rather compact. Spikelets usually many-flowered and 3-4 lines long, but often reduced to 1 or 2 flowers and hardly exceeding 1 line. Glumes obtuse to acute, often purple.

Very common in all situations; also throughout extra-tropical Australia and New Zealand.

Amongst the very numerous forms assumed by this grass the following may be noted :—

Var. *australis.* Leaves filiform, very short. Stems about 6 inches. Panicle small and loose. Spikelets about 2-flowered, 1-1½ line long. *P. australis.* R. Br.

Var. *tenera.* Creeping and tangled in the undergrowth. Leaves at the nodes short, filiform, smooth. Panicle short, loose. Spikelets 1 or 2-flowered, about 1 line. *P. tenera.* F. v. M.

Var. *alpina.* Stunted. Leaves filiform, involute, but thicker than in lowland forms. Panicle rather dense. Spikelets usually 3 lines long, purple.

Var. *littoralis.* Creeping, with erect branches. Leaves distichous, flat. Spikelets normal, few, in a compact panicle. In sand-dunes, Recherche, &c.

2. P. BILLARDIERI, *Steud.* A rigid, tufted, coastal grass. Leaves often exceeding the stems, filiform, rigid, with involute margins. Stems 1-2 feet. Panicle elongated, branched, narrow, sometimes nearly linear. Spikelets about

4-flowered, 2-2½ lines long. Glumes acute, scabrous, and usually pubescent. Grain adnate to the pale.

Common on coasts; also Victoria, South Australia, West Australia, and North Australia.

3. P. SAXICOLA, *R. Br.* Glabrous, creeping at the base. Leaves few, flat, dispersed, nearly as long as the stems. Stems 1-1½ foot. Panicle loose, linear, about 2-3 inches long. Spikelets 3-4-flowered, about 2 lines long.

On most mountain summits.

4. P. ANNUA, *Linn.* Small, tufted. Leaves flat, flaccid, bright green. Stems about 6 inches. Panicle loose, spreading. Spikelets few-flowered, about 2 lines. Glumes obtuse, the margins more scarious than in other species.

Introduced. Very common in the Northern Hemisphere.

5. P. COMPRESSA, *Linn.* Creeping at the base. The stems erect, flat, about 1 foot. Leaves dispersed, rather short, flat. Panicle erect, rather close, 2-3 inches long. Spikelets 4-6-flowered, about 2 lines long.

Introduced. Common in northern temperate parts.

6. P. RIGIDA, *Linn.* A tufted annual, from 3-9 inches. Leaves nearly or quite as long as the stems, flat, but very narrow. Panicle linear, rigid, one-sided. Spikelets nearly sessile, erect, many-flowered, 3-5 lines long.

Introduced. Common in Europe and Western Asia.

7. P. PRATENSIS, *Linn.* Creeping and stoloniferous, with erect stems, 1-2 feet high. Leaves narrow, with short obtuse ligules. Panicle 3-4 inches long, rather loose and spreading. Spikelets oblong, usually 4-flowered, about 2 lines long. Glumes broad, lateral nerves faint.

Introduced. Very common in the Northern Hemisphere.

8. P. TRIVIALIS, *Linn.* Very similar to the last, but not creeping. Stems taller and more slender. Leaves similar, but the ligule longer and rather acute. Panicle usually 6 inches long, more branched, with more numerous spikelets. Spikelets about 1½ line long, 2-3-flowered. Flowering glumes acute, lateral nerves distinct.

Introduced. Common in the Northern Hemisphere.

39. SCHEDONORUS.

Spikelet several-flowered, rather flat, [illegible] inch. Glumes not prominently keeled, often rounded, and conspicuously 5-nerved, unawned, usually obtuse. Grain free.

The genus occurs in temperate parts of both Hemispheres. It is closely allied to *Festuca*.

Panicle erect, rather rigid ... ... 1. *S. littoralis.*
Panicle loose, spreading ... ... 2. *S. hookerianus.*

1. S. LITTORALIS, *Beauv.* Tufted, erect, pale, and rigid. Leaves involute, terete, rigid, 1-2 feet long. Stems about as long as the leaves. Panicle 3-6 inches long, linear, rather dense. *Festuca littoralis*, Lab.

Very common on coasts; also South Australia, Victoria, and New South Wales. Distributed widely in both Hemispheres.

2. S. HOOKERIANUS, *B.* Tufted and tall. Leaves flat, usually 2-3 feet. Stems exceeding the leaves. Panicle 6-8 inches, with slender, distant, spreading branches. Spikelets not numerous, few-flowered. Glumes rather dark, acute. *Festuca hookeriana*, F. v. M.

South Esk and Meander Rivers; also Victoria and New South Wales.

40. GLYCERIA.

Spikelets several-flowered. Glumes rounded at the back, many-nerved, apex obtuse, scarious. Inflorescence a linear erect panicle.

Widely distributed in both Hemispheres. Differing from *Poa* only in habit and in spikelet being many-flowered and linear.

Panicle loose. Spikelets ½-¾ inch long ... ... 1. *G. fluitans.*
Panicle rather dense. Spikelets 3-4 lines .. ... 2. *G. stricta.*

1. G. FLUITANS, *R. Br.* Tall and creeping. Leaves flat, narrow, about 2 feet long. Stems 2-3 feet. Panicle linear, loose, 8-12 inches. Spikelets linear, about ¾ inch long. *Poa fluitans*, Scop.

Common on fresh water courses; also temperate Australia, and generally in temperate localities of both Hemispheres.

2. G. STRICTA, *H.* Tufted, erect, and rather rigid. Leaves filiform, 8-12 inches. Stems about 1 foot. Panicle narrow, about 3 inches. Spikelets linear, 3-4 lines long. *Poa syrtica*, F. v. M.

Salt marshes, Risdon, Launceston, &c.; Bass Straits; also Victoria, South Australia, and West Australia, and in New Zealand.

41. BRIZA.

Spikelets many-flowered, broad, slightly flattened. Glumes broad, very obtuse, unawned. Spikelets pendulous, in loose panicles.

A small genus, common to temperate parts of both Hemispheres.

Spikelets numerous, about 2 lines long ... ... 1. *B. minor.*
Spikelets few, 5-6 lines long ... ... 2. *B. maxima.*

1. B. MINOR, *Linn.* Erect, 6 inches to 1 foot. Leaves rather short, broad, flat. Panicle 2-4 inches, spreading. Spikelets very numerous, about 2 lines long. Glumes green, with a broad white margin.

Very common. Introduced. European, but now a common weed of cultivation in all temperate climates.

2. B. MAXIMA. *Linn.* Erect, 6-18 inches. Leaves short, rather narrow, acute. Panicle of few pendulous spikelets. Spikelets nearly ½ inch, very obtuse, empty glumes dark, flowering glumes becoming scarious.

Cascades, Bellerive, and doubtless in many localities in settled districts. Introduced. European.

42. BROMUS.

Spikelet many-flowered, little or not at all flattened. Outer glumes acute, but unawned. Flowering glumes convex, continuous at the apex into a long slender awn, the sides developing into 2 slender lobes at its base. Inflorescence a loose or rather dense erect panicle.

Spikelets swollen, under 1 inch ... ... 1. *B. mollis.*
Spikelets narrow, elongated ... ... 2. *B. sterilis.*

1. B. MOLLIS, *Linn.* Erect, usually tufted, mostly 1-2 feet. Leaves flat, rather narrow, shorter than the stems. Panicle erect, rather dense, 2-3 inches. Spikelets softly downy, rather swollen, ½-¾ inch long. Flowering glume very obtuse. Awn slender, as long as the glume.

Very common. Introduced. European.

2. B. STERILIS, *Linn.* Erect, 1-2 feet. Leaves as long at the stem, flat, not very narrow. Panicle usually long, the numerous spikelets spreading, sometimes drooping. Spikelets 1-3 inches long, narrow. Flowering glume narrow, the awn usually much exceeding the glume.

Very common. Introduced. European.

43. CERATOCHLOA.

Spikelets many-flowered, flat. Glumes flattened, keeled, acute or tapering into a short awn. Inflorescence an erect loose panicle.

C. UNIOLOIDES, *D. C.* Erect, tufted, 2-3 feet. Leaves broad, flat, nearly as long as the stem. Panicle loose, 6 inches to 1 foot. Spikelets numerous, ¾-1 inch long. *Bromus unioloides*, H.; *Festuca unioloides*, Willd.

Very common. Introduced from North America.

44. FESTUCA.

Spikelet many-flowered, flat. Glumes narrow, acute, in many species elongated into a slender awn, rounded and faintly nerved on the back.

A genus common to all temperate climates.

Awn slender, shorter than the glume... 1. *F. ovina.*
Awn much longer than the glume ... ... 2. *F. bromoides.*
Glume acute, unawned ... ... 3. *F. elatior.*

1. F. OVINA, *Linn.* Erect, slender, 1-3 feet. Leaves very short, filiform. Panicle slender, loose, and rather spreading. Spikelet ¼ inch long, flat. Flowering glumes with very slender awns, seldom more than half as long as the glume. *F. duriuscula*, Linn., included.

Common in woody places; also in South Australia, Victoria, and New South Wales, also in temperate localities in both Hemispheres.

2. F. BROMOIDES, *Linn.* Tufted, slender, 6 inches to 1 foot. Leaves filiform, shorter than the stem. Panicle rather dense, linear, one-sided, 1-4 inches. Spikelets narrow, about ¼ inch long. Glumes narrow, contracting into a relatively long slender awn. *F. myúrus*, Linn.

Very common. Introduced. European.

3. F. ELATIOR, *Linn.* Tufted or shortly creeping, erect, 2-5 feet. Leaves flat, short, not very broad. Panicle erect, narrow, loose, one-sided, 3 inches to 1 foot. Spikelets usually about ½ inch. Glumes acute or shortly awned.

Occasionally found near cultivation, usually in damp situations. Introduced. European.

> Very variable in general development. The form commonly met with in pastures is often referred to as *F. pratensis*, Linn.

45. AGROPYRUM.

Spikelet many-flowered, flattened, sessile or nearly so, in two opposite rows, at right angles to the longitudinal section of the stem. Rhachis alternately notched to accommodate the spikelets.

Distributed in temperate parts of both Hemispheres.

Glumes elongated into long awns .. ... 1. *A. scabrum.*
Glumes acute.
  Spikelets recurved . ... 2. *A. pectinatum.*
  Spikelets erect.
    Tufted. Spike 1-2 inches... ... ... 3. *A. velutinum.*
    Creeping. Spike 2-4 inches long... . ... 4. *A. repens.*

1. A. SCABRUM, *Beauv.* Erect, 1-3 feet. Leaves much shorter, narrow, convolute when dry. Spike long, the spikelets often distant from one another. Spikelets 1-1½ inch long, the glumes continued into long slender awns. *Triticum scabrum*, R. Br.

Very common: also extra-tropical Australia and New Zealand.

2. A. PECTINATUM, *Beauv.* Erect, 1-2 feet. Leaves flat, narrow, short. Spike 1-2 inches long. Spikelets $\frac{1}{2}$-$\frac{3}{4}$ inch, recurved. Glumes ribbed, acute, or shortly awned. *Triticum pectinatum*, R. Br.

Recherche. Thomas Plains, near Chudleigh, Hampshire Hills, &c.; also Victoria and New South Wales.

3. A. VELUTINUM, *Nees.* Tufted, shortly creeping at the base, 6 inches to 1 foot. Leaves rather numerous, short, flat, but convolute when dry. Spike 1-2 inches, rather dense. Spikelets erect, about $\frac{1}{2}$ inch long. Glumes rigid, faintly ribbed, acute. *Triticum velutinum*, H.

Middlesex Plains, Surrey Hills, at a considerable altitude; also in Victoria and New South Wales.

4. A. REPENS, ***Beauv.*** Creeping extensively. Stems erect, stiff, 1-3 feet. Leaves short, flat, broad, distributed on the stems. Spike not dense, 2-4 inches. Spikelets usually numerous, erect, $\frac{1}{2}$ inch. Glumes rigid, ribbed, shortly awned. *Triticum repens*, Linn.

Established in waste places. Introduced. Found in Europe, Northern Asia, and North and South America.

46. BRACHYPODIUM.

Spikelet many-flowered, hardly flattened, sessile, with its side to the stem. The rhachis not indented.

A small north temperate genus, very close to *Agropyrum*.

B. DISTACHYUM, *B. et S.* Tufted, 6-8 inches. Leaves short, flat. Spike usually of 2 spikelets. Spikelets erect, 1-1$\frac{1}{2}$ inch long. Glumes narrow, prolonged into slender, rather rigid, awns.

Domain and Risdon. Introduced. Northern temperate distribution.

47. LOLIUM.

Spikelet many-flowered, closely sessile, in two opposite rows in a terminal spike, the rhachis alternately notched. Spikelet with one end turned to the rhachis, and usually the outer empty glume enlarged and enclosing the spikelet.

A north temperate genus.

Spikelet exceeding the empty glume ... ... 1. *L. perenne.*
Spikelet shorter than the empty glume ... ... 2. *L. temulentum.*

1. L. PERENNE, *Linn.* Tufted perennial, about 1 foot. Leaves narrow, flat, short. Spike interrupted, 3-8 inches. Spikelets about $\frac{1}{2}$ inch. Outer empty glume rather acute, shorter than the spikelet. Flowering glumes acute, not awned, or very shortly so.

Very common. Introduced. European.

Var. *italicum.* Annual, 2-3 feet. Flowering glumes with slender awns. *L. italicum*, Braun.

2. L. TEMULENTUM, *Linn.* Erect annual, 2 feet. Leaves flat, rather broad, shorter than the stem. Spike slender, 4-8 inches. Outer empty glume obtuse, exceeding the spikelet, sometimes with a slender awn.

Widely dispersed, but not common. Introduced. European.

48. LEPTURUS.

Spikelet 1-flowered, sessile, and embedded in a notch in the rhachis, arranged in opposite rows, forming a linear spike. Outer empty glumes 2 or 1, enclosing the spikelet. Flowering glume short and thin.

A small genus found on the coasts of most temperate regions of both Hemispheres.

Creeping. Spike curved .. .. 1. *L. incurvatus.*
Sub-erect. Spike straight ... ... 2. *L. cylindricus.*

1. L. INCURVATUS, *Trin.* Creeping, branched, or merely depressed, about 6 inches long. Leaves narrow, very short. Spike 2-4 inches, slender, curved. Outer glumes 2, rigid, acute, about 3 lines long, in a pair outside the spikelet, except in the terminal flower, where they are opposite.

Common in settled parts near the sea. Probably introduced. Considered indigenous in South Australia, Victoria, New South Wales, and New Zealand. Common in Northern Hemisphere.

2. L. CYLINDRICUS, *Trin.* Very similar to the last, but rather larger, depressed at the base, sub-erect above. Leaves not very short, flat, rather narrow. Spike straight or slightly curved, often 6 inches long. All but the terminal spikelet with only one outer empty glume, otherwise the same details.

Sandy Bay; possibly elsewhere, but overlooked. Considered indigenous in West Australia, South Australia, Victoria, and New South Wales. Common in Northern Hemisphere.

49. HORDEUM.

Spikelets 1-flowered, 3 together, in alternate notches of the rhachis, forming a dense spike. Outer empty glumes 2, filiform, extending into an awn. Flowering glume closely enveloping the fruit, terminating in a long awn. In most instances only the central spikelet of the group is fertile.

A small genus of temperate and sub-tropical parts, chiefly of the Northern Hemisphere.

H. MURINUM, *Linn.* Tufted, 6 inches to 1 foot. Leaves flat, broad. Spike 1-3 inches, dense. Spikelets about 4 lines long, the awns 1-1½ inch. Outer spikelets barren; the empty glumes all dilated at the base, and ciliate.

Very common. Introduced. European.

> *H. maritimum*, With. A smaller grass, depressed at the base. Leaves short, narrow. Spike 1 inch. Empty glumes all filiform, not ciliate. Rare. Possibly will get a foothold. European.
>
> *H. nodosum*, Linn. Similar to *H. murinum*, but taller, the spike less dense. Outer empty glumes all filiform. *H. pratense*, Huds. A common European reported from Tasmania, but that has not yet established itself.

GYMNOSPERMS.

Spores of 2 kinds. The gametophyte very rudimentary, and that of the megaspore developing without the sporange falling from the parent. The bract usually developing an internal process or scale, but neither the bract nor the scale forms an ovarian sack round the ovules. Sporangia in unisexual amenta.

Only three tribes of the Coniferous class are represented in Tasmania.

Taxineæ. Ovuliferous scales not developed. Ovules terminal, solitary, or, when more than one, the bracts become succulent and the ovules protrude. A well-developed aril usually present.

Leaves minute, closely imbricating.
Leaves in 4 regular rows .. .. 3. *Microcachrys.*
Leaves irregularly arranged.
Tree. Ovules solitary or few ... ... 2. *Dacrydium.*
Shrub. Ovules many, in a small reflexed amentum... ... ... 1. *Pherosphæra.*
Leaves linear-oblong, obtuse ... ... 5. *Podocarpus.*
Leaves none. Ultimate branches assuming the character of irregularly rhomboid leaves ... ... 4. *Phyllocladus.*

Taxodineæ. Ovuliferous scales partially fused with but exceeding the bracts, arranged in a spiral form. Ovules few or many.

Leaves imbricating or spreading ... ... 6. *Athrotaxis.*

Callitrineæ. Ovuliferous scales and bracts intimately blended in pairs or whorls. Ovules 1 to many. Leaves minute, appressed.

Leaves in 4 regular rows. Cone minute ... ... 7. *Fitzroya.*
Leaves in whorls at intervals. Cones about 1 inch... 8. *Callitris.*

1. PHEROSPHÆRA.

Female amenta ovate, of several spirally-arranged scales, each bearing a single erect ovule, the scales thickening at the base on ripening, but not otherwise altering.

The genus consists of one species, and is confined to Tasmania.

P. HOOKERIANA, *Archer.* A densely-branched erect shrub, 3-6 feet, diœcious. Leaves thick, keeled, obtuse, closely appressed, $\frac{1}{2}$-$\frac{3}{4}$ line long, in rows, but not regularly 4-rowed. Male amenta erect, solitary, terminal, 1-$1\frac{1}{2}$ line. Fruiting amenta of about 8 scales, differing but little from the leaves, reflexed.

Mount Field Range, Mount La Perouse, western mountains, Cradle Mount, &c.

2. DACRYDIUM.

Female amenta of few fleshy bracts, in a short head or reduced to a single one, each with a single reversed ovule. Fruiting amenta not conspicuously altered. Aril cup-shaped and nearly enclosing the seed.

A small genus, with representatives from the Indian Archipelago to New Zealand.

D. FRANKLINII, *H.* A tall much-branched tree. Leaves thick, keeled, closely imbricate, about $\frac{1}{2}$ line. Male amenta small, ovoid, terminal. Fruit at the end of branches hardly larger than the vegetative ends. Seeds globular, about 1 line diameter.

Common in many parts in swampy localities, from Upper Huon River to Port Davey and Macquarie Harbour.

3. MICROCACHRYS.

Female amenta of numerous spirally-arranged loosely imbricate bracts, each bearing one recurved ovule; in the fruiting condition the bracts become succulent and the seeds erect.

A genus of but one species.

M. TETRAGONA, *H.* Creeping and much-branched. Leaves about $\frac{3}{4}$ line long, closely imbricate, in 4 rows. Male amenta solitary, terminal, about $1\frac{1}{2}$ line long. Fruiting amenta oblong, about 4-6 lines long, fleshy, crimson.

Common on numerous mountain-tops.

4. PHYLLOCLADUS.

Female amenta of few bracts, sometimes only one, each bearing a single erect ovule. The bracts become thickened and fleshy in fruit. Seed ovoid, rather pointed, sunk in a fleshy aril.

A small genus, but distributed from East India to New Zealand.

P. RHOMBOIDALIS, *Rich.* Erect, with rather regular spreading or depressed branches, sometimes 50-60 feet. Lateral branches expanded into irregularly rhomboid leaf-like organs. Leaves reduced to small acute scales. Male amenta about 3 lines long, usually 2 or 3 together. Female amenta terminal, about 2 lines long. *Thalamia asplenifolia*, Spr.

Common on mountains, principally in the south and west.

5. PODOCARPUS.

Female amenta of 2-4 much-reduced bracts, connate with the peduncle. Ovules 1 or 2, protruding from the bracts, anatropous. Fruit a solitary, terminal, exposed seed, with an enlarged succulent peduncle.

A small genus, found in most tropical and temperate parts of the Southern Hemisphere and Eastern Asia.

P. ALPINA, *R. Br.* Small, much-branched, creeping over rocks or sub-erect. Leaves alternate, thick, narrow-oblong to linear-obtuse, ¼-¾ inch. Male amenta axillary, solitary, but sometimes many near together. Seed about 3 lines long. *Nageia alpina*, F. v. M.

Common on most mountain-tops; also in Victoria and New South Wales.

6. ATHROTAXIS.

Female amenta of numerous spirally-imbricate scales, each scale bearing 3-6 pendulous ovules. Fruit a small, globular, erect, terminal cone; the scales loose, woody, thickened above. Seeds compressed, broadly winged. Male amenta terminal, solitary.

The genus consists of the three Tasmanian plants.

Leaves 1-2 lines long.
  Leaves closely pressed to the stem, very obtuse ... 1. *A. cupressoides.*
  Leaves looser, acute .. ... . 2. *A. laxifolia.*
Leaves 3-4 lines long ... . 3. *A. selaginoides.*

1. A. CUPRESSOIDES, *Don.* A small erect tree, attaining 40 feet. Leaves closely appressed and imbricating, thick, keeled, and very obtuse, about 1½ line long. Cone ½ inch diameter, spherical, the apex of the scales nearly orbicular, with a short dorsal point.

Western mountains, Lake St. Clair, Field Range to the west and south-west.

2. A. LAXIFOLIA, *H.* Similar to the last in habit. Leaves erect and imbricate but not closely appressed, thick and keeled but acute, about 2 lines long. Cone nearly spherical, about ⅓ inch, the scales thickened above and ending in a short point.

Western mountains, Field Range, near La Perouse.

3. A. SELAGINOIDES, *Don.* A small erect tree, extensively but symmetrically branched, 40-50 feet high. Leaves 3-4 lines long, lanceolate, acute, thick, closely but loosely imbricating, slightly incurved. Cones ¾ inch, broadly ovate, the scales ending in an almost membranous acute point.

Western mountains, Mount Field, Mount Hartz, Adamson Peak, Mount La Perouse to West Coast.

7. FITZROYA.

Female amenta of 2 pairs of opposite scales, with 2 erect ovules at the base of each of the inner ones, not materially altering in the fruiting condition. Seeds 3-winged.

A genus of but 2 species, one being found in temperate South America.

F. ARCHERI, *B. et H.* An erect branched shrub, 4-5 feet. Leaves closely imbricate, in 4 rows, thick, keeled, obtuse, ½ line. Male amenta solitary, terminal, hardly differing from foliage. Fruiting amenta solitary, terminal, about 1½ line long, the scales rather fleshy. Seeds 2, about ¾ line long, with a pointed apex and 3 prominent wings. *Diselma archeri*, H.

On mountain-tops. Mount Pelion, Adamson Peak, Mount La Perouse, Mount Dundas, &c.

8. CALLITRIS.

Female amenta in 6, rarely 8, scales, in 2 whorls. Ovules several within each scale. Fruit cone with much-enlarged scales, sometimes all appearing to arise from the same level. Seeds irregular, 1-2 or 3-winged.

A small genus, found in Australia and New Caledonia.

Cone nearly globular ... ... 1. *C. rhomboidea.*
Cone ovoid ... ... 2. *C. oblonga.*

1. C. RHOMBOIDEA, *R. Br.* A small tree, about 20 feet, much-branched at the base. Leaves minute, triangular, in distant whorls of 3. Male amenta about 1½ line, oblong, usually 3, at the ends of the branches, besides a few solitary ones in the axils. Fruit cones usually in clusters of 3 or 4, nearly globular, ½-¾ inch diameter. Scales 6, thick and woody. *C. cupressiformis*, Vent.; *Frenela ventenati*, Mirb.; *F. rhomboidea*, Endl.

East Coast, Bass Straits; also South Australia, Victoria, New South Wales, and Queensland.

2. C. OBLONGA, *Rich.* Very similar to the last, but less branched at the base. Cones ¾-1 inch, ovoid. Scales thick and woody, narrow, 3 long and 3 much shorter, hardly united at the base, each with a small protuberance near the apex. *Frenela australis*, R. Br.

South Esk, near Avoca and Launceston, &c.

CRYPTOGAMS.

The following Classes only are included here:—

LYCOPODINÆ (Club-mosses).
  Divided into:—
    Isoëtaceæ. Spores of 2 kinds, in sporangia at the base of long quill-like leaves. Stems very short.
    Lycopodiaceæ. Spores of one size. The sporangia solitary, in the axils of small leaves. Stems long, often branched.
    Selaginellaceæ. Similar to the last, but spores of two sizes.

FILICINÆ (Ferns in the broadest sense).
  Divided into:—
    Filices (Ferns) and *Ophioglossaceæ* (Adders' Tongues). Leaves relatively large. Spores on the back or margin of the leaves, which are

sometimes specially modified, or the sporangia sunk in the substance of the leaf. Spores all similar.

Hydropteridæ (Water Ferns). Sporangia in greatly altered capsule-shaped leaves. Spores of 2 kinds.

ISOËTACEÆ.

Spores of two kinds, contained in separate but similar oblong sporangia. Sporangia half-buried in the upper surface of the expanded leaf base, solitary. Water plants with a persistent, enlarging, bulbate stem, from which arise crowded erect leaves with expanded flat bases and cylindrical quill-like laminæ.

An anomalous order of no very close affinity to any living plants. Apparently related on the one hand to Eusporangiate ferns (*Ophioglossum*, &c.), on the other to Heterosporous lycopods (*Selaginella*).

ISOËTES

The character of the order.

I. LACUSTRIS. *Linn.* Leaves 4-8 inches, rigid, but the longer ones flaccid when dry. *I. gunnii* and *I. stuartii*, Braun., *I. humilior* and *elatior*, F. v. M., included.

World-wide distribution.

> The plant varies considerably in light and shade and other local characters, and I have thought it better, pending further acquaintance, to follow Bentham, and retain all forms as one species.

LYCOPODIACEÆ.

Spores all of one sort, minute, in sporangia formed on the upper surface or axils of the leaves, solitary, and relatively large. Fertile leaves sometimes differing from barren ones, and crowded together.

Plant very small. Leaves linear, nearly as long as the stem, all basal ... ... 1. *Phylloglossum.*
Leaves dispersed. Sporangia small, axillary ... 2. *Lycopodium.*
Leaves dispersed. Sporangia large, constricted in the middle ... ... 3. *Tmesipteris.*

1. PHYLLOGLOSSUM.

Fertile leaves minute and crowded, in a small cone on an erect slender stem, ½ inch. Leaves linear, erect, all basal, and about as long as the stem.

P. drummondi, Kunze. The only species in the genus.

George Town. West Australia, Victoria, New South Wales.

2. LYCOPODIUM.

Fertile leaves crowded together, sometimes in a denser mass than in the case of foliage leaves. Leaves dispersed along the branches.

i. Leaves of two sizes ... 1. *L. scariosum.*
Leaves minute. Plant erect ... 2. *L. densum.*
Plant procumbent or flaccid ... ii.
ii. Fertile leaves in a dense long-stalked spike ... 3. *L. clavatum.*
Spike sessile, usually lateral. Leaves acute 4. *L. laterale.*
Fruiting portion hardly differentiated. Leaves blunt ... ... 5. *L. selago.*

1. L. SCARIOSUM, *Forst.* Procumbent, spreading. Dorsal leaves broadly lanceolate, pointed, 2-3 lines long. Ventral leaves smaller and narrower. Fruit in dense spikes terminating the branches. *L. decurrens*, R. Br.

2. L. DENSUM, *Lab.* Erect, stiff, and branched. Leaves narrow, acute, erect, ½-1½ line long. Fruit in dense terminal spikes.
Common on heaths. South and Eastern Australia to New Zealand.

3. L. CLAVATUM, var. FASTIGIATUM, *Linn.* Ascending, branched. Leaves narrow, acute, somewhat spreading, 2-3 lines long, not tipped with the fine hair of *L. clavatum*. Spikes dense, 1-2 inches long, often 2 or more together, raised on a nearly bare peduncle 1-4 inches long.
Very common on mountains. In most temperate climates.

> This plant has been confused with *L. carolinianum*, L., which probably does not occur in Tasmania.

4. L. LATERALE, *R. Br.* Vaguely branched and spreading. Leaves narrow, acute, upturned or spreading, 2-4 lines long. Fruit in short, dense, sessile, spikes that are usually, but not always, lateral. *L. diffusum*, R. Br., included.
Heaths at all altitudes. Common. South and East Australia to New Zealand.

5. L. SELAGO, *L.* Erect, but often drooping, dichotomously branched. Leaves spathulate, mostly spreading, usually obtuse, ¼-½ inch. Fertile leaves very numerous towards the end of the branches, seldom assuming a specialised character. *L. varium*, H., included.
Very common in woods. Victoria, New South Wales, and most temperate localities.

3. TMESIPTERIS.

Fertile leaves indefinitely dispersed, divided nearly to the base into two equal spathulate lobes. Sporangia narrow-oblong, bilocular, and slightly constricted, formed at the junction of the lobes.

T. TANNENSIS, *Bern.* Creeping and rootless in the trunks of tree-ferns. The leaves on simple, sub-pendulous, aerial branches. Barren leaves simple, broadly spathulate, mucronate, ½-1 inch long; each half of fertile leaf similar to a barren leaf, and probably homologous.
Very common. Eastern Australia to New Zealand.

SELAGINELLACEÆ.

Spores of two kinds, in small sporangia, in the upper axils of undifferentiated leaves.

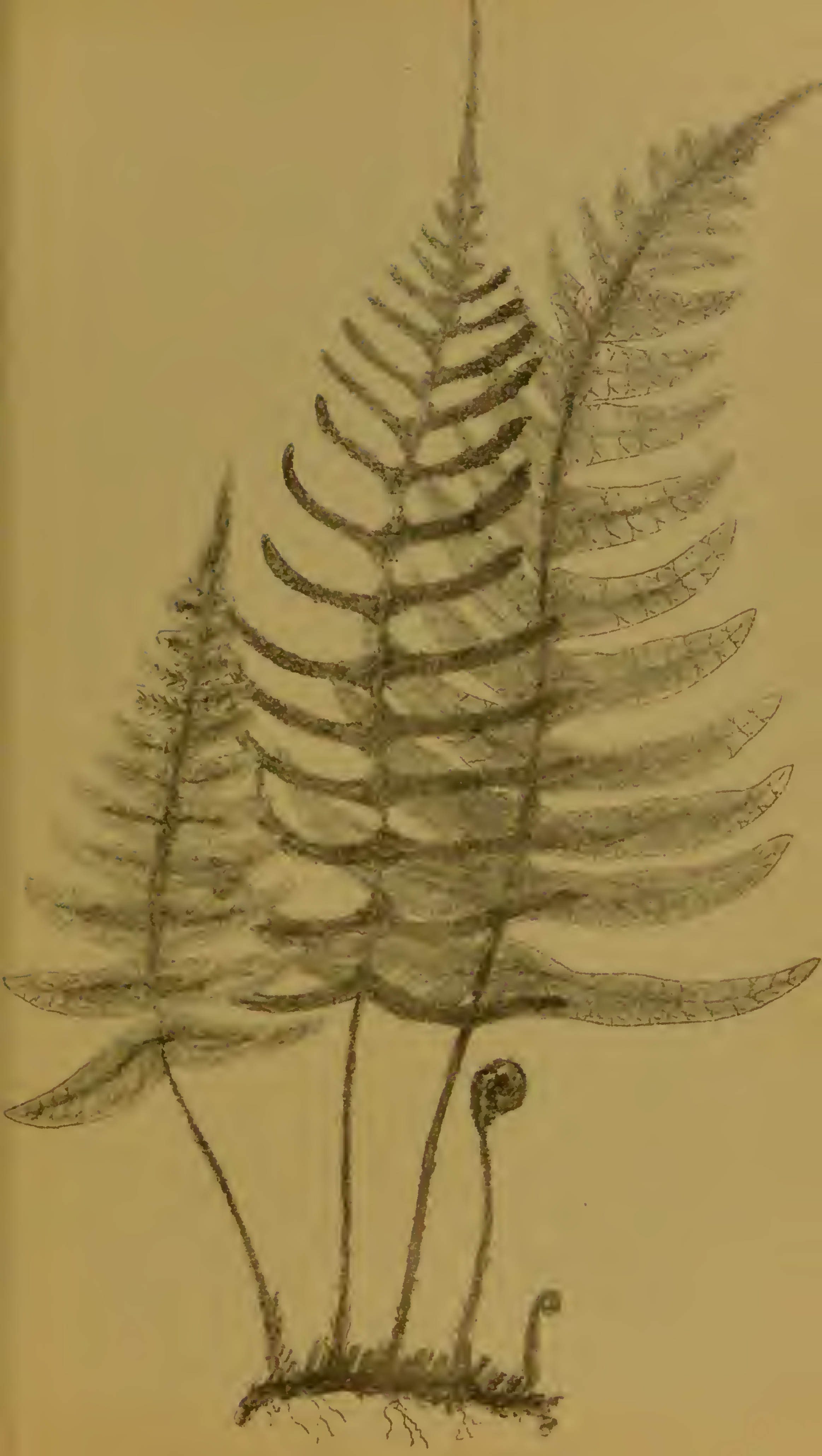
SELAGINELLA.

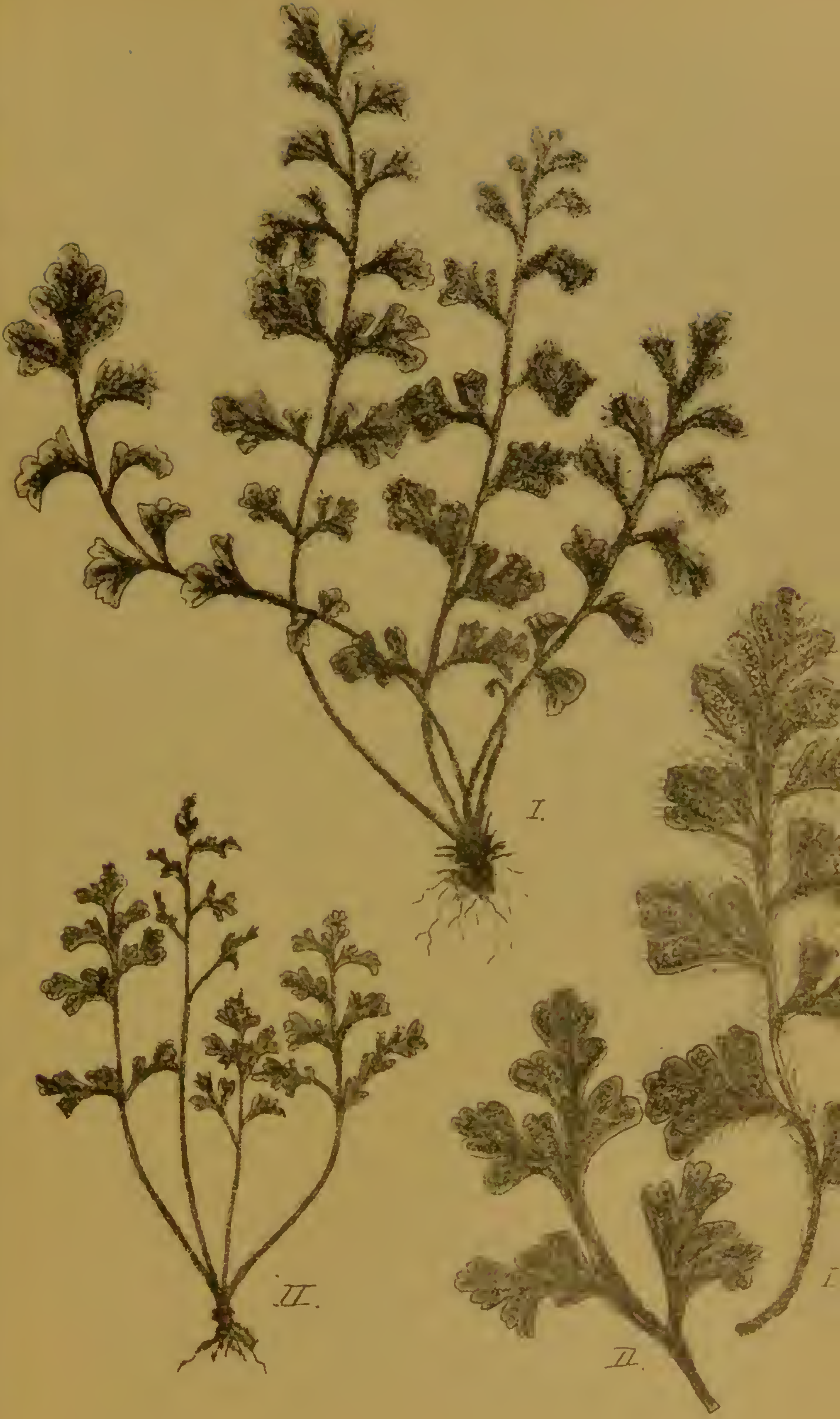
Character of the order.

Branches dispersed ... ... 1. *S. uliginosa.*
Branches basal ... ... 2. *S. preissiana.*

1. S. ULIGINOSA, *Spreng.* Erect or ascending, 2-6 inches, vaguely branched, perennial. Leaves 1 line long, narrow-ovoid, acute. Sporangia small, solitary, in the upper axils.
Very common on heaths. Throughout Australia.

2. S. PREISSIANA, *Spreng.* Very similar to the last, only annual, very erect, smaller, and the branches all (or nearly all) from the base only.
North Coast; also throughout Australia





I. GYMNOGRAMME RUETŒFOLIA. *H.*
II. GYMNOGRAMME LEPTOPHYLLA. *Desv.*

OPHIOGLOSSACEÆ (Adders' Tongues).

Shoot consisting of one leaf divided into two segments, a leaf-like vegetative portion and a more constricted sporangia-bearing portion. Sporangia rather large, sunk in the substance of the leaf.

Leaf-segments simple . . .. 1. *Ophioglossum.*
Leaf-segments divided ... . 2. *Botrychium.*

1. OPHIOGLOSSUM.

Leaf annual, simple, fertile portion clavate.

O. LUSITANICUM, *L.* Leaf usually but not always solitary, arising from a persistent tuberous base. Vegetative portion broadly lanceolate, stalked, about 1 inch long. Fertile portion 1-3 inches long, erect, linear. Sporangia in two rows, near the apex, the termination barren and usually acute. *O. gramineum*, R. Br.; *O. vulgatum*, L., partly.

Near Mount Dromedary, Mount Direction, Formosa, &c., amongst grass. Cosmopolitan.

2. BOTRYCHIUM.

Leaves annual, divided. Sporangia superficial.

Divisions of barren leaflet entire ... ... 1. *B. lunaria.*
Divisions of barren leaflet 3-lobed ... ... 2. *B. ternatum.*

1. B. LUNARIA, *Swz.* Leaf 4-8 inches high. Vegetative portion with about 8-14 reniform crenated segments. Fertile portion erect, divided.

Scarce, but widely spread. Victoria, New South Wales, New Zealand. Northern temperate distribution

2. B. TERNATUM, *Swz.* Similar to the last, but vegetative portion of the leaf a second or third time divided *B. virginianum*, Swz., partly.

Scarce, but widely distributed. Victoria, New South Wales, Queensland, New Zealand. Temperate northern parts, but not in England.

FILICES (Ferns).

Stem various, usually perennial. Leaves large, simple to much divided. Sporangia minute, born in clusters or sori naked or covered by an indusium, on the back or margin of a leaf similar to, or somewhat differing from, the purely vegetating leaves. Spores all minute and similar.

i. Sori at or about the margin ... ... ii.
Sori not affecting the margin ... xii.
Sori on a comb-like leaf .. .. 27. *Schizæa.*
ii. Sori continuous, long ... . iii.
Sori abbreviated ... . vii.
iii. Fertile leaves much deformed ... .. 1. *Lomaria.*
Fertile similar to barren leaves ... ... iv.
iv. Leaves 2-4 inches, or linear, with cuneate segments ... ... v.
Leaves large, much divided ... ... vi.
v. Leaf 2-3 times divided. ... ... 5. *Cheilanthes.*
Leaf with cuneate pinnules ... . 13. *Platyloma.*
vi. Leaf-veins forked, but never joining ... .. 7. *Pteris.*
Leaf-veins joining in loops ... ... 8. *Litobrochia.*

3. LINDSAYA.

Sori continuous or interrupted, on the margin in a cup-like depression opening outwards, formed by the indusium and leaf margin. Differing from *Davallia* only in habit.

Leaves linear, with rhomboid pinnules	1. *L. linearis.*
Leaves 2-3 times divided	2. *L. trichomanoides.*

1. L. LINEARIS, *Swartz.* Leaves 2-6 inches, linear. Pinnules numerous, rhomboid, mostly opposite. Fertile pinnules deformed.

Very common on heaths. Extra-tropical Australia to New Zealand.

2. L. TRICHOMANOIDES, *Dry.* Leaves 3-4 inches, erect. Pinnules once or twice divided, lobes broadly linear and obtuse. Fertile pinnules not deformed, tipped by the sori.

In woody situations, in the west and north-west. New South Wales and New Zealand.

4. ADIANTUM.

Sori on the margin, small, interrupted, protected by an overlapping indusial leaf margin.

A. ÆTHIOPICUM, *Linn.* Leaf 4-12 inches, many times divided into distant, slender, stalked pinnules. Pinnules rhomboid or reniform, 2-3 lines broad. Sori causing semi-circular depressions in the margin.

Very common in well-drained rocky pastures. In all temperate and sub-tropical places.

5. CHEILANTHES.

Sori continuous or more often interrupted, near the margin, no true indusium, but partially protected by the incurved margin.

C. TENUIFOLIA, *Swartz.* Leaves erect, 4-6 inches, much divided.

Very common on hills. Throughout Australia. Asia to New Zealand.

6. DOODIA.

Sori short, linear to oblong, in one or more lines, parallel to the midrib of the pinnule, covered by an indusium opening inwards. Differs from *Woodwardia* in the sori being superficial.

D. CAUDATA, *R. Br.* Leaves narrow, lanceolate, terminating with a long, undivided, narrowing lobe. Pinnules attached by midrib only, and lobed at the lower end, becoming broadly attached above. Margin serrate, some forms rather delicate and with one row of sori, others coarse and harsh with two to more rows, and approaching *D. aspera*, but never pinnatisect.

Mount Wellington. Common in north and west. Eastern Australia to New Zealand.

7. PTERIS.

Sori marginal, continuous, protected by a membranous indusium continuous with the incurved margin. Veins of pinnules forked, but not joining. Leaves much divided.

Coarse, hard ; segments narrow	1. *P. aquilina.*
Delicate, fragile ; segments broad	2. *P. tremula.*

1. P. AQUILINA, *L.* Leaf erect, 2-8 feet, stiff, dark green. Stem creeping, subterranean.

Universal in temperate and extra-tropical distribution.

2. P. TREMULA. *R. Br.* Tufted. Leaf erect, 1-4 feet, much divided, delicate, pale. *P. arguta*, Ait.

Not common, but in numerous places in damp forests. Extra-tropical Australia, and widely distributed in both Hemispheres.

8. LITOBROCHIA.

Close to *Pteris*, but at least some of the veins united, forming meshes, and the sori interrupted.

Pale green, creeping ... ... 1. *L. incisa.*
Tufted ... ... 2. *L. comans.*

1. L. INCISA, *Presl.* Leaf 1-4 feet, pale green, glabrous, fleshy. Pinnules usually entire, looping veins few. Stem creeping. *Pteris incisa*, Thun.

Very common. Temperate climates in both Hemispheres.

2. L. COMANS, *Presl.* Leaves 1-3 feet, usually twice divided, rather dark green. Ultimate pinnules serrate and attached by a very broad base, bases blending, veins freely looping. *Pteris comans*, Forst. Very like *P. tremula* in general appearance.

West and north-west. Eastern Australia to New Zealand. Polynesia and South America.

9. ASPLENIUM.

Sori oblong, linear, straight or nearly so, on a diverging vein, covered by an indusium opening along the inner margin.

i. Pinnules undivided ... ... ii.
Pinnules once to many times divided ... ... v.
ii. Pinnules 2-6 lines, as long as broad ... ... iii.
Pinnules 1-3 inches, longer than broad ... ... iv.
iii. Leaves flaccid, apex filiform ... ... 1. *A. flabellifolium.*
Leaves erect, apex lobed ... ... 2. *A. trichomanes.*
iv. Pinnules oblong, toothed, obtuse ... . 3. *A. obtusatum.*
Pinnules narrow, oblong, toothed, acute .. . 4. *A. bulbiferum.*
v. Ultimate pinnules fairly broad. Sori on the back 4. *A. bulbiferum.*
Ultimate pinnules narrow. Sori apparently marginal .. .. 5. *A. flaccidum.*

1. A. FLABELLIFOLIUM. *Cav.* Leaves linear, pinnate, 6-18 inches, the apex for some distance filiform and without pinnæ, rooting and viviparous at the end. Pinnules rhomboid to obcuneate, rarely some of the lower ones divided, $\frac{1}{4}$-1 inch long.

Very common in shelves of rocks. Extra-tropical Australia and New Zealand.

2. A. TRICHOMANES. *L.* Leaves linear, erect, pinnate, 3-6 inches, apex pinnate. Pinnules rhomboid to semi-orbicular, $\frac{1}{4}$ inch long.

North, east, and west. Victoria, New South Wales to New Zealand. Temperate Northern Hemisphere.

3. A. OBTUSATUM. *Forst.* Leaves 3-18 inches, pinnate, erect or drooping. Pinnules broad to narrow, oblong, obtuse and obtusely toothed, thick, 1-3 inches long. *A. marinum* (partly).

On sea-coasts. East Australia to New Zealand.

> A. LUCIDUM, *Forst.* A New Zealand plant, very similar to the above, but of thinner consistency, larger pinnules, very finely toothed, and with numerous very long and narrow sori, appears in some Tasmanian lists, apparently by mistake.

4. A. BULBIFERUM. *Forst.* In the typical form the leaf is tall, broad, twice divided, the secondary pinnules more or less deeply divided into obtuse teeth.

lobes, or toothed segments, according to the robustness of the plant, dark green, erect or drooping, 6-24 inches, often developing young plants on the pinnules.
Abundant. Temperate Australia and Southern Hemisphere.

Var. *laxum.* Similar, but without young plants on pinnules.

Var. *hookeriana.* Generally stunted, but not separable. *A. hookeriana,* Col.

Var. *pinnatum.* Often large, 6-18 inches. Pinnules entire, coarsely toothed, acute to caudate. Closely approaching *A. obtusatum,* Forst.

5. A. FLACCIDUM, *Forst.* Leaves 6-12 inches, narrow, flaccid, once or twice divided, all segments linear, obtuse. Sori rather broad, one to each segment, and pushed to the margin. Imperceptibly passing into slender forms of *A. bulbiferum.*
Common in forests. East Australia to New Zealand.

10. ATHYRIUM.

Sori linear, diverging, very small, narrow, curved, covered by an indusium opening inwards.

A. AUSTRALE, *Presl.* Tufted, caudex somewhat erect. Leaves pale green, fleshy, broad, 2-3 times divided. Ultimate pinnules broadly and obtusely lobed or segmented. *Asplenium umbrosum,* Sm.
Huon district, west to north-east, in permanently damp situations. Victoria. New South Wales, Queensland, Asia, Africa, Oceania, New Zealand.

11. GYMNOGRAMME.

Sori linear, diverging on the back of the leaf, ill-defined, diffused or forked, not protected by an indusium.

Leaves hairy, pinnate ... ... 1. *G. rutæfolia.*
Leaves very small, 2-3 times divided... ... ... 2. *G. leptophylla.*

1. G. RUTÆFOLIA, *H.* Tufted. Leaves narrow, 3-6 inches, hairy, pinnate. Pinnules rhomboid, entire to segmented. ½-¾ inch. *Grammitis rutifolia,* R. Br.
Common in ledges of rocks; capable of resuscitating after prolonged drought. Extra-tropical Australia, New Zealand, Europe, and America.

2. G. LEPTOPHYLLA, *Desv.* Annual, from a persistent tuberous base. Leaf 1-2 inches broad, 2-3 times divided, pale green. Sporangia diffused on the back of the leaf. *Grammitis leptophylla,* Swartz.
Glenorchy, Back River, George's Bay, Spring Bay, &c. Probably widely spread, but overlooked. In all extra-tropical places.

12. GRAMMITIS.

Sori oblong, diverging, on the back of the leaf, usually clearly defined. No indusium.

G. AUSTRALIS, *R. Br.* Leaf simple, narrow, lanceolate, 2-4 inches, erect. In alpine situations dwarfed, and the sori run together into an irregular mass, and the margins recurved. *Polypodium australe,* Met.
Very common. Victoria, New South Wales, Queensland, New Zealand. America.

13. PLATYLOMA.

Sori in the Tasmanian plant continuous or nearly so, in typical forms interrupted. Margin incurved, often assuming the character of an indusium.

P. FALCATA, *Sm.* Leaves lanceolate, the stalk hispid, 1-2 feet, pinnate. Pinnules numerous, cuneate to lanceolate, acute, attached by the midrib only, 1-2 inches. *Pteris falcata*, R. Br.; *Pellæa falcata*, Fée.

Common, mostly in rocky pastures. Victoria, New South Wales, Queensland, Asia, New Zealand.

14. HYPOLEPIS.

Sori close to the margin, minute, and covered by the incurved margin of the leaf, which becomes a membranous indusium.

H. TENUIFOLIA, *Bern.* Creeping. Leaf 8-24 inches, broad, much divided.

Great Lake, and occasionally in shaded places.

> The Tasmanian plant is indistinguishable in habit and morphology from *Polypodium punctatum*, Th., and is without doubt an extreme form of that fern. East Australia. New Zealand to America.

15. POLYPODIUM.

Sori discoid, without an indusium. Veins free.

Plant creeping. Leaves large, much-divided . ... 1. *P. punctatum.*
Plant tufted. Leaves small, irregularly pinnate ... 2. *P. grammitides.*

1. P. PUNCTATUM, *Thun.* Creeping, finely hairy. Leaf 1-3 feet, much-divided, broad, ultimate segments obtusely toothed or lobed. Sori minute, approaching the margin, which often recurves more or less to protect them. *P. rugulosum*, Hook.

Very common. Temperate Australia, Asia, Africa, New Zealand.

2. P. GRAMMITIDES, *R. Br.* Small, tufted, usually epiphytal. Leaves 3-6 inches, once divided, irregular pinnules linear, entire or obtusely toothed. Sori $\frac{1}{4}$-$\frac{3}{4}$ line wide, broadly elliptical.

Common. Victoria, New South Wales, New Zealand.

16. PHYMATODES.

Sori discoid. Indusium none. Veins freely netting.

P. BILLARDIERI, *Presl.* Stems widely creeping over stones and up trunks. Leaves 6-12 inches long, entire or irregularly lobed. *Polypodium pustulatum*, Forst.

Very common. Eastern Australia and New Zealand.

17. NEPHRODIUM.

Sori discoid. Indusium excentrically attached. Leaves much-divided.

Leaves nearly glabrous. Lobes of pinnules nearly
obtuse .. .. 1. *N. decompositum.*
Leaves hispid. Lobes acute . . . ... 2. *N. hispidum.*

1. N. DECOMPOSITUM, *R. Br.* Tufted, dark green. Leaves 1 foot high, not very broad. Ultimate pinnules rather obtusely lobed. Sori minute. *Aspidium decompositum*, Spreng.

Common in quiet damp places. Temperate Australia to New Zealand.

2. N. HISPIDUM, *Hook.* Tufted. Leaves vaguely clothed with rigid bristles, 1 foot high, broad. Ultimate pinnules acutely lobed. Sori not minute. *Aspidium hispidum*, Swartz.

West Coast. Victoria, New South Wales, New Zealand.

18. POLYSTICHUM.

Sori discoid. Indusium peltate, attached by the centre. Leaves 2-3 times divided.

Tufted, middle primary pinnules longest ... ... 1. *P. vestitum.*
Creeping, lowest primary pinnules longest ... ... 2. *P. coriaceum.*

1. P. VESTITUM, ***Presl.*** Tufted, 2-4 feet high. Leaves covered at the base with coarse scales, bipinnate, not spreading. Ultimate pinnules obtuse or nearly so, vaguely obtusely toothed, often bulb-bearing. Often referred to *Aspidium aculeatum*, Swartz., of the Northern Hemisphere, to which it is very closely allied.

Very common. All temperate parts of Southern Hemisphere.

2. P. CORIACEUM, *Sch.* Creeping on deadwood and stones. Leaves erect, 8-18 inches, stiff, lowest pinnules 3-5 inches. Ultimate pinnules obtusely lobed or toothed. *Aspidium capense*, Willd.; *Aspidium coriaceum*, Swartz.

Common in woods. Victoria, New South Wales, Asia, Africa, America, New Zealand.

19. CYSTOPTERIS.

Sori small, on the back of the leaf, protected by pocket-like indusium.

C. FRAGILIS, *Bern.* Small, tufted. Leaf 3-5 inches, twice divided. Ultimate pinnules oblong, pointed, obtusely toothed.

Wet rocks at Lake St. Clair, Middlesex Plains. Most temperate climates, including New Zealand, but not in Australia.

20. DICKSONIA.

Sori small, marginal, possessing an indusium and opening outwards, but the leaf-margin recurves, turning the sorus over the indusium.

D. ANTARCTICA, *Lab.* Tall tree-fern. Leaves long, broadly lanceolate, many times divided, not long persistent after dying. Ultimate pinnules obtusely and vaguely toothed. *D. billardieri*, F. v. M.

Very common. Extra-tropical Australia to New Zealand.

21. DAVALLIA.

Sori on the margin, small, covered by a pocket-shaped indusium, opening outwards.

D. DUBIA, *R. Br.* Creeping. Leaves pale, 1-2 feet, much-divided, broad. Ultimate pinnules rather narrow, lobed or segmented. Indusium small and delicate, soon covered and hidden by the sorus, which then appears free from the margin and naked. *Dicksonia dubia*, Gaud.

Common in north-west to George's Bay. Victoria, New South Wales, Queensland.

22. CYATHEA.

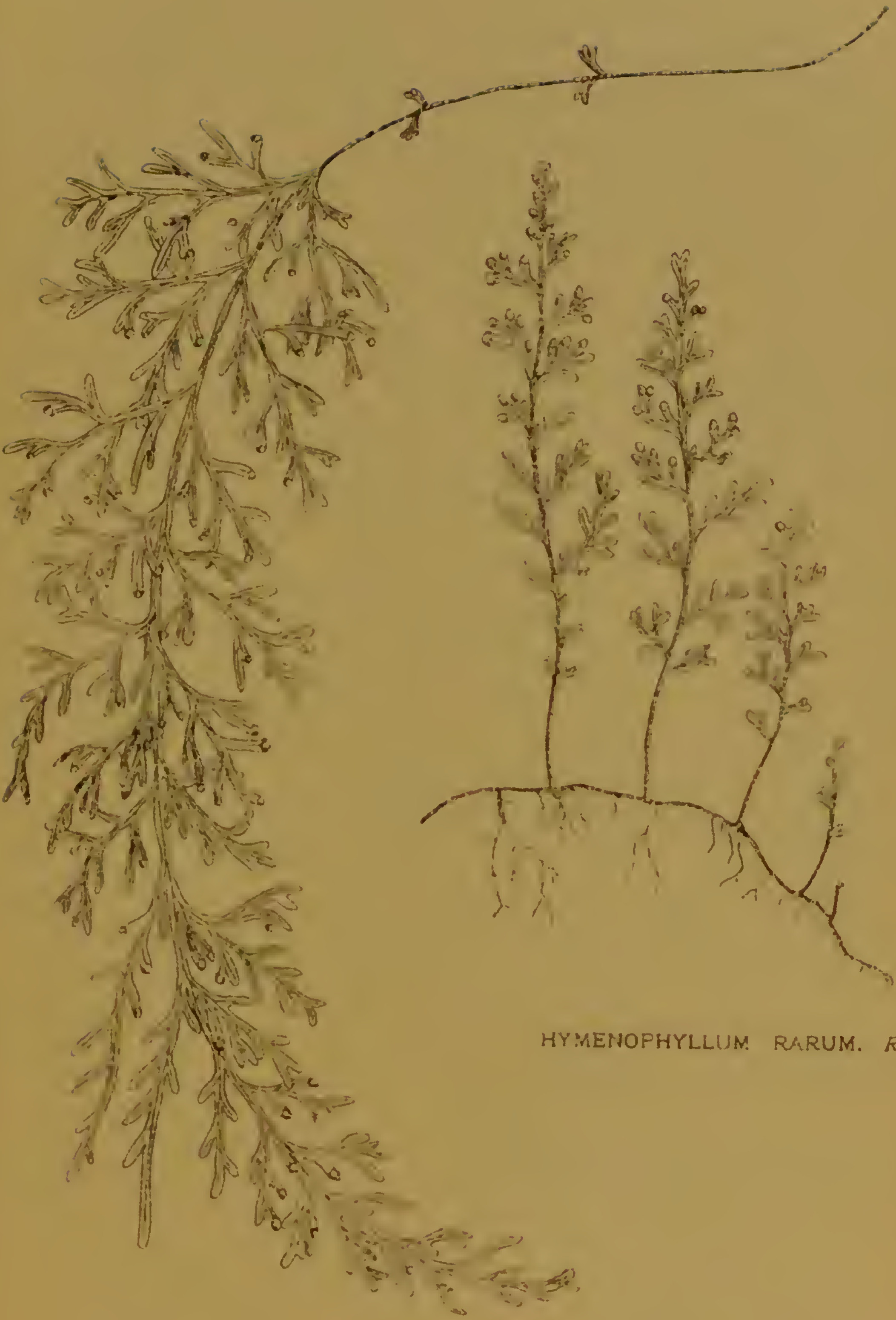
Sori on the back of the leaf covered by a hemispherical indusium, which ruptures in the centre, leaving a cup-like annulus below and surrounding the sorus.

C. CUNNINGHAMI, *H.* Leaves very long, much-divided. Ultimate pinnules narrow, minutely toothed. Stem very tall, 20-50 feet, slender. *C. medullaris*, Swtz. (in error).

Table Cape, Esperance, Geeveston, Long Bay, Tasman Peninsula, &c.

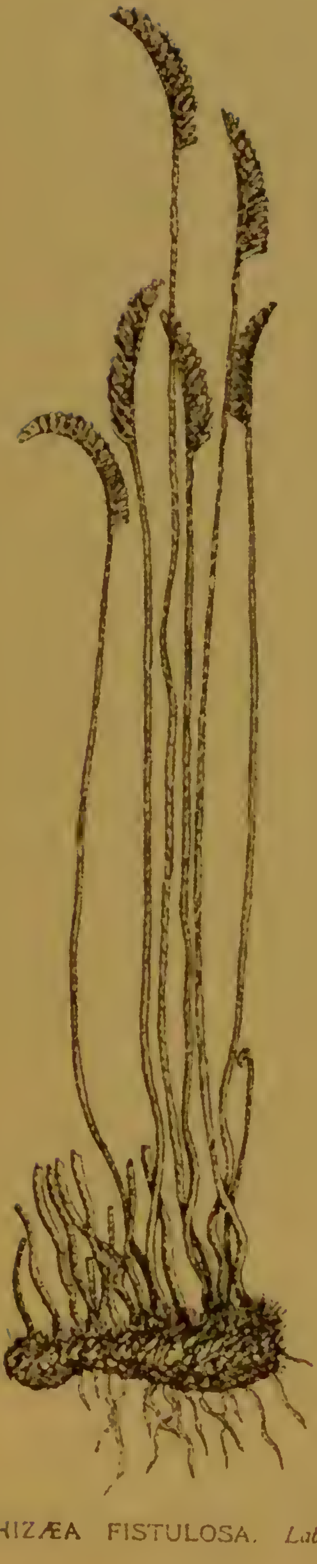
23. ALSOPHILA.

Sori minute, round, naked on the back of the leaf.

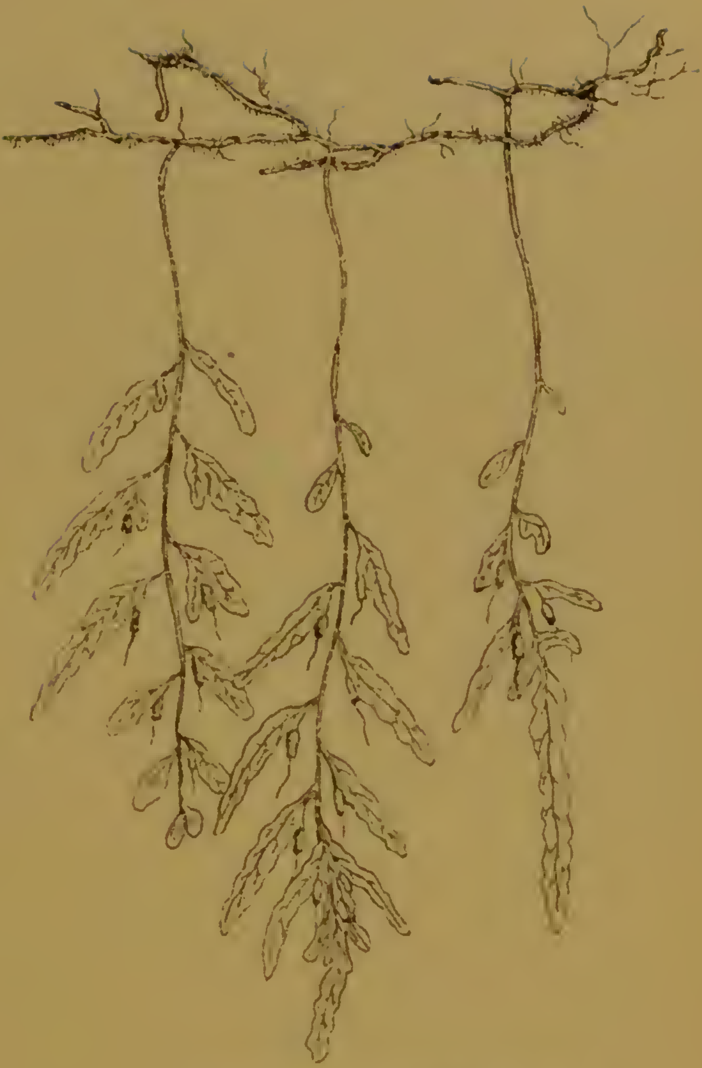


HYMENOPHYLLUM RARUM. *R. Br.*

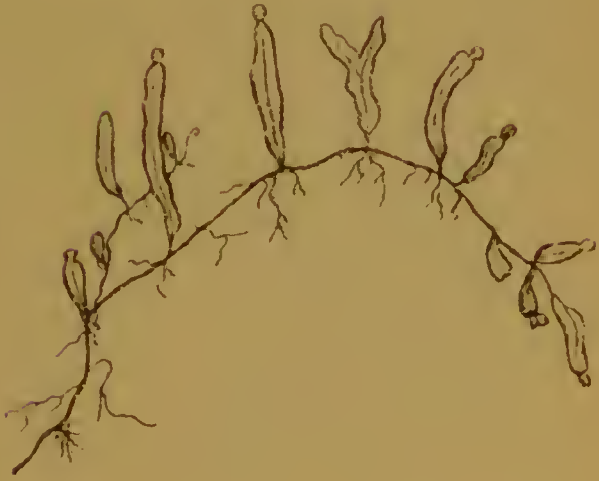
HYMENOPHYLLUM FLABELLATUM. *Lab.*



SCHIZÆA FISTULOSA. *Lab.*



TRICHOMANES VENOSUM. *R. Br.*



HYMENOPHYLLUM MARGINATUM. *H. et G.*

John Vail, Government Printer, Tasmania

A. AUSTRALIS, *R. Br.* Leaves very long, much-divided. Ultimate pinnules lanceolate, acute to obtuse, entire or nearly so. Stalk with minute acute prickles. Stem 4-10 feet, thick. Leaf-base persistent.

Common in northern parts; Sandfly. Victoria, New South Wales, Queensland.

> *A. cooperi*, H., recorded from Esperance district erroneously for *Cyathea cunninghami*.

24. GLEICHENIA.

Sori minute, of few sporangia, naked on the back of the leaf. Leaves dichotomously divided, persistently growing from the forks. Habit creeping.

Pinnules entire, pale green	1. ***G. flabellata.***
Pinnules narrow, beaded, flat	2. ***G. circinata.***
Pinnules narrow, beaded, convex	3. ***G. dicarpa.***
Leaf-segments small, convex. Leaf once forked ...	4. ***G. abscida.***

1. G. FLABELLATA, *R. Br.* Leaves 1-4 feet high, mostly bipinnate. Pinnules linear, lanceolate, entire, obtuse.

Very common in woods and on river-banks Eastern Australia to New Zealand.

2. G. CIRCINATA, *Swartz.* Leaves often 6 feet high, stalks wiry, 2-many times divided. Pinnules linear, long, numerously segmented into semi-orbicular, minute, flat parts, segments sometimes with a tendency to become convex. *G. microphylla.* H.

Common in scrub, tangled in the undergrowth. Southern and Eastern Australia to New Zealand.

3. G. DICARPA, *R. Br.* Very similar to the last, only the segments convex, forming a sack-like depression beneath, and usually shorter and erect On mountains becoming stunted and tomentose

Common, chiefly on heaths South-East Australia to New Zealand.

4. G. ABSCIDA, *n. s.* Closely related to *G. dicarpa*, but more robust. Leaves 1-2 feet high, glabrous, divided into a single pair of pinnæ, and without persistent growing points. Leaf-segments small and convex.

South of Arthur Range. Growing with, but distinct from, *G. dicarpa.* (T. B. Moore.)

25. TRICHOMANES.

Sorus in a narrow, deep, marginal tube. Sporangia developed upon a bristle that is greatly exserted at maturity.

T. VENOSUM, *R. Br.* Very delicate and pendulous, irregularly once divided, 2-4 inches, pale green segments broadly linear.

Very common on trunks of tree-ferns. South-East Australia and New Zealand.

26 HYMENOPHYLLUM.

Sori discoid, marginal, in pockets opening outwards. Placenta short, or, if filiform, barely exserted. Delicate, filmy, creeping ferns.

i.	Leaves 2-4 times divided, glabrous	ii.
	Leaves divided, densely woolly...	6 *H. malingii.*
	Leaves entire or nearly so	7. *H. marginatum.*
ii.	Leaf-margin entire	iii.
	Leaf-margin toothed	v
iii.	Frond very narrow	2. *H. rarum*
	Frond broad	iv.
iv.	Stalk and rhachis winged	3. *H. javanicum.*
	Stalk and rhachis hardly or not winged ...	1. *H. flabellatum*

v. Indusium truncated, toothed ... ... 4. *H. tunbridgense.*
Indusium oblong, entire ... ... 5. *H. wilsoni.*

1. H. FLABELLATUM, *Lab.* Leaves 6-18 inches long, drooping or pendulous, 2-4 times divided into linear lobes, lower pinnules often the longest. *H. nitens*, R. Br.

Very common on stems of tree-ferns. East Australia to New Zealand.

2. H. RARUM, *R. Br.* Leaf 2-4 inches, erect or nearly so, narrow, 2-3 times divided, the lowest pinnules very short.

Very common on tree-ferns. South-East Australia.

3. H. JAVANICUM, *Spreng.* Leaves 3-5 inches, erect, much-divided, the rhachis and stalk provided with an expanded pale green wing. *H. flabellatum*, R. Br.; *H. crispatum*, H.

Very common in rocky places in damp woods. Eastern Australia to New Zealand, and Eastern Asia.

4. H. TUNBRIDGENSE, *Sm.* Leaves 1-2 inches, erect, 2-3 times divided, margins minutely and acutely toothed. Indusium orbicular, truncate, toothed.

Common on mossy rocks, &c., in damp woods. In all temperate localities in both Hemispheres.

5. H. WILSONI, *H.* Plant hardly distinguishable from the last, only usually rather smaller, the valves of the sori much longer than broad, and entire on the margin. Some forms appear intermediate.

Distribution similar.

The Tasmanian plant is referred here, but its very small size and habit hardly warrants it.

6. H. MALINGII, *H.* Leaf 1-2 inches high, 2-3 times divided. Ultimate pinnules linear, clustered, the whole tomentose and grey. Receptacle a short thick bristle, hardly protruding.

On bark of *Athrotaxis selaginoides*, Don., in damp shaded places; also New Zealand.

7. H. MARGINATUM, *H. et G.* Leaves $\frac{1}{2}$-$\frac{3}{4}$ inch, simple, spathulate or with few indefinite lobes, a marginal vein throughout. Sori at the tips of the leaves.

Queen River, West Coast, Lune River; also in New South Wales.

27. SCHIZÆA

Sori collected on short linear pinnules, continuous and over-arched by the margins. Pinnules gathered together in short comb-like masses on a long slender stem. Barren leaves linear, simple or divided. Tufted habit.

Pinnules 1 line long ... ... 1. *S. fistulosa.*
Pinnules usually 3 lines long ... ... 2. *S. bifida.*

1. S. FISTULOSA, *Lab.* Erect, 3-6 inches, undivided, filiform, the fertile leaves bearing a comb-like end, $\frac{3}{4}$ inch long, brown, with numerous linear curved pinnules hardly 1 line long. Barren leaves simple, filiform.

Widely spread in heathy country, but overlooked. Temperate Australia, Africa, America, New Zealand, &c.

2. S. BIFIDA, *Will.* Fertile leaves erect, 3-6 inches, simple, or once or twice dichotomously divided. Comb-like process $\frac{3}{4}$ inch long, usually greenish. Pinnules slender, filiform, sometimes divided, straight, the lowest often longest, crowded, mostly 3-4 lines long. Barren leaves filiform, usually many times dichotomously divided. Sometimes combined with *S. dichotoma*, Sm., but very different in habit and detail.

Widely distributed, in heaths, principally in the north; easily overlooked. Southern, Eastern, and Northern Australia to New Zealand.

28. TODEA.

Sori discoid, naked on the back of the leaf, usually massed and confluent. Sporangia relatively large, red, and without an annulus.

T. BARBARA, *H.* Leaves many feet long, twice divided. Ultimate pinnules lanceolate, 1-1½ inch long, acute, minutely toothed, attached by a broad base. Growing into a massive or trunk-like base. *P. africana*, Willd.; *Osmunda barbara*, Thun.

George's Bay, Tasman Peninsula, Longley, Recherche, West Coast. Temperate Australia to New Zealand; also South Africa.

HYDROPTERIDÆ (Water Ferns).

Spores of two kinds, contained in minute sporangia, which are themselves contained in small, rounded, sessile or stalked sporocarps. Microspores usually many, megaspores single in their respective sporangia. Small water or mud plants, creeping.

Leaves thread-like ... ... 1. *Pilularia*.
Leaves crowded, oblong ... ... 2. *Azolla*.

1. PILULARIA.

Sporocarps sessile at the base of the leaves, ¼ inch long, hairy and hard, 4-celled, containing both micro- and mega-sporangia.

P. GLOBULIFERA, *Linn.* Stem slender, creeping for a few inches. Leaves green, thread-like, distant, 2-3 inches long. Creeping in mud in shallow lakes.

Formosa, Penquite, Ben Lomond, &c. In all temperate climates.

2. AZOLLA.

Sporocarps sessile on the upper surface and towards the axils of the lower leaves. Megasporange smaller, and by the side of the microsporange.

A. FILICULOIDES, *Lam.* Stem creeping for a few inches. Leaves broadly oblong, pointed, crowded, and overlapping, [illegible] inch long. Microsporangia as large as the leaves. *A. rubra*, H.

Circular Head, Brighton, &c. South and East Australia to New Zealand; also America.

APPENDIX.

ARRANGEMENT OF ORDERS

Adopted by BARON VON MUELLER.

DICOTYLEDONEÆ.

- Choripetaleæ Hypogynæ.
  - Ranunculaceæ.
  - Dilleniaceæ.
  - Magnoliaceæ.
  - Monimiaceæ.
  - Lauraceæ.
  - Papaveraceæ.
  - Cruciferæ.
  - Violaceæ.
  - Pittosporaceæ.
  - Droseraceæ.
  - Elatineæ.
  - Hypericineæ.
  - Polygalaceæ.
  - Tremandraceæ.
  - Rutaceæ.
  - Zygophyllaceæ.
  - Linaceæ.
  - Geraniaceæ.
  - Malvaceæ.
  - Sterculiaceæ.
  - Tiliaceæ.
  - Euphorbiaceæ.
  - Urticaceæ.
  - Cupuliferæ.
  - Casuarineæ.
  - Sapindaceæ.
  - Stackhousiaceæ.
  - Frankeniaceæ.
  - Plumbaginaceæ.
  - Portulacaceæ.
  - Caryophyllaceæ (Scleranthaceæ, incl.).
  - Amarantaceæ.
  - Salsolaceæ (Chenopodiaceæ).
  - Ficoideæ.
  - Polygonaceæ.
  - Phytolaccaceæ.
- Choripetaleæ Perigynæ.
  - Leguminosæ.
  - Rosaceæ.
  - Saxifragaceæ.
  - Crassulaceæ.
  - Onagraceæ.
  - Salicarieæ (Lythraceæ).
  - Haloragaceæ.
  - Myrtaceæ.
  - Rhamnaceæ.
  - Araliaceæ.
  - Umbelliferæ.
- Synpetaleæ Perigynæ.
  - Santalaceæ.
  - Proteaceæ.
  - Thymeliaceæ.
  - Rubiaceæ.
  - Caprifoliaceæ.
  - Cucurbitaceæ.
  - Compositæ.
  - Campanulaceæ.
  - Candolleaceæ (Stylidiaceæ).
  - Goodeniaceæ.
- Synpetaleæ Hypogynæ.
  - Gentianaceæ.
  - Loganiaceæ.
  - Plantaginaceæ.
  - Primulaceæ.
  - Jasminaceæ (Oleaceæ).
  - Apocynaceæ.
  - Convolvulaceæ.
  - Solanaceæ.
  - Scrophulariaceæ.
  - Lentibulariaceæ.
  - Asperifoliæ (Boraginaceæ).
  - Labiatæ.
  - Verbenaceæ.
  - Myoporaceæ.
  - Ericaceæ.
  - Epacridaceæ.
- Apetaleæ Gymnospermeæ.
  - Coniferæ.

MONOCOTYLEDONEÆ.

- Calyceæ Perigynæ.
  - Orchidaceæ.
  - Burmanniaceæ.
  - Iridaceæ.
  - Hydrocharidaceæ.
  - Amaryllidaceæ.
- Calyceæ Hypogynæ.
  - Liliaceæ.
  - Typhaceæ.
  - Lemnaceæ.
  - Fluviales (Naiadaceæ).
  - Alismaceæ.
  - Xyridaceæ.
  - Juncaceæ.
  - Restiaceæ (Centrolepidaceæ, incl.).
- Acalyceæ Hypogynæ.
  - Cyperaceæ.
  - Gramineæ.

ACOTYLEDONEÆ.

- Acotyledoneæ vasculares.
  - Rhizospermeæ (Hydropteridæ, &c.).
  - Lycopodoneæ (Selaginaceæ, incl.).
  - Filices.

SYSTEMATIC ARRANGEMENT.

By Dr. E. Warming.

Div. I.—PTERYDOPHYTA.

- Class, Filicineæ.
  - Sub-class, Filices.
    - Fam., Eusporangiatæ.
    - ,, Leptosporangiatæ.
  - Sub-class, Hydropterideæ.
- Class, Lycopodineæ.
  - Sub-class, Lycopodieæ.
  - ,, Selagineleæ.

Div. II.—GYMNOSPERMÆ.

- Class, Coniferæ.
  - Fam. Taxoideæ.
  - ,, Pinoideæ.

Div. III.—ANGIOSPERMEÆ.

- Class, Monocotyledons.
  - Fam., Helobieæ.
    - Order, Juncaginaceæ.
    - ,, Potamogetonaceæ.
    - ,, Alismaceæ.
    - ,, Hydrocharitaceæ.
  - Fam., Glumifloræ.
    - Order, Juncaceæ.
    - ,, Cyperaceæ.
    - ,, Gramineæ.
  - Fam., Spadicifloræ.
    - Order, Typhaceæ.
    - ,, Lemnaceæ.
  - Fam., Enantioblastæ.
    - Order, Xyridaceæ.
    - ,, Restiaceæ.
    - ,, Centrolepidaceæ.
  - Fam., Liliifloræ.
    - Order, Liliaceæ.
    - ,, Amaryllidaceæ.
    - ,, Hæmodoraceæ.
    - ,, Iridaceæ.
  - Fam., Gynandreæ.
    - Order, Burmanniaceæ.
    - ,, Orchidaceæ.
- Class, Dicotyledons.
  - Fam., Casuarinifloræ.
    - Order, Casuarinaceæ.
  - Fam., Quercifloræ.
    - Order, Cupuliferæ.
  - Fam., Urticifloræ.
    - Order, Urticaceæ.
  - Fam., Polygonifloræ.
    - Order, Polygonaceæ.
  - Fam., Curvembryæ.
    - Order, Caryophyllaceæ.
    - ,, Amarantaceæ.
    - ,, Chenopodiaceæ.
    - ,, Phytolaccaceæ.
    - ,, Portulacaceæ.
    - ,, Aizoaceæ (Ficoideæ).
  - Fam., Polycarpicæ.
    - Order, Ranunculaceæ.
    - ,, Magnoliaceæ.
    - ,, Monimiaceæ.
    - ,, Lauraceæ.
  - Fam., Rhœadinæ.
    - Order, Papaveraceæ.
    - ,, Fumariaceæ.
    - ,, Cruciferæ.
  - Fam., Cistifloræ.
    - Order, Resedaceæ.
    - ,, Droseraceæ.
    - ,, Violaceæ.
    - ,, Frankeniaceæ.
    - ,, Dilleniaceæ.
    - ,, Elatinaceæ.
    - ,, Hypericaceæ.
  - Fam., Gruinales.
    - Order, Oxalidaceæ.
    - ,, Linaceæ.
    - ,, Geraniaceæ.
  - Fam., Columnifloræ.
    - Order, Sterculiaceæ.
    - ,, Tiliaceæ.
    - ,, Malvaceæ.
  - Fam., Tricoccæ.
    - Order, Euphorbiaceæ.
    - ,, Callitrichaceæ.
  - Fam., Terebinthinæ.
    - Order, Rutaceæ.
    - ,, Zygophyllaceæ.
  - Fam., Æsculinæ.
    - Order, Sapindaceæ.
    - ,, Tremandraceæ.
    - ,, Polygalaceæ.
  - Fam., Frangulinæ.
    - Order, Rhamnaceæ.
  - Fam., Thymelæinæ.
    - Order, Thymelæaceæ.
    - ,, Proteaceæ.
  - Fam., Saxifraginæ.
    - Order, Crassulaceæ.
    - ,, Saxifragaceæ.
    - ,, Pittosporaceæ.

Fam., Rosifloræ.
Order, Rosaceæ.

Fam., Leguminosæ.
Order, Cæsalpinaceæ.
,, Papilionaceæ.
,, Mimosaceæ.

Fam., Passiflorinæ.
Order, Cucurbitaceæ.

Fam., Myrtifloræ.
Order, Lythraceæ.
.. Onagraceæ.
.. Haloragidaceæ.
.. Myrtaceæ.

Fam., Umbellifloræ.
Order, Araliaceæ.
,, Umbelliferæ.

Fam., Hysterophyta.
Order, Santalaceæ.

Fam., Bicornes.
Order, Ericaceæ.
.. Epacridaceæ.

Fam., Primulinæ.
Order, Primulaceæ.
.. Plumbaginaceæ.

Fam., Tubifloræ.
Order, Convolvulaceæ.

Fam., Personatæ.
Order, Solanaceæ.
.. Scrophulariaceæ.
.. Utriculariaceæ (Lentibulaceæ).
.. Plantaginaceæ.

Fam., Nuculiferæ.
Order, Boraginaceæ.
.. Verbenaceæ.
.. Labiatæ.

Fam., Contortæ.
Order, Gentianaceæ.
.. Apocynaceæ.
.. Oleaceæ.

Fam., Rubiales.
Order, Rubiaceæ.
.. Caprifoliaceæ.

Fam., Dipsacales.
Order, Dipsacaceæ.

Fam., Campanulinæ.
Order, Campanulaceæ.
.. Lobeliaceæ.
.. Goodeniaceæ
.. Stylidiaceæ.

Fam., Aggregatæ.
Order, Compositæ.

DICTIONARY.

abietina : like Abies, the fir genus.
abscida : unfinished, abridged.
acerosa : sharp, keen leaves.
acetosella : sour tasting.
achene : a small, dry, unopening, seed-like fruit, containing one seed.
acicular : like a needle.
aculeata : prickly, pointed.
acuminate : gradually narrowing into a point.
Adder-tongue : Ophioglossum.
adpressa : pressed close to—(usually the leaves to the stem).
adscendens : branches ascending towards the ends, otherwise a depressed habit.
æmula : emulating, rivalling.
æquata : equal, similar.
Æthiopicum : Northern Africa.
agrestis : rural, rustic, wild.
albidiflora : white-flowered.
alpigenum : alpinus, alpine : genus, origin.
amara : bitter.
amygdalina : like the Almond (amygdalus), refers to the leaves.
anceps : two-sided ; two-natured ; amphibius.
andicola : occurring in the Andes.
andrœcium : *see* stamens.
anemonifolia : leaves like Anemone.
angustifolia : narrow-leaved.
antennaria : resembling Antennaria, a genus in Compositæ.
antennifera : perianth with prolonged members resembling the antennæ of insects.
anthemoides : like Anthemis, a genus in Compositæ.
antipoda : an antipodean species of a northern genus.
Ant Orchis : Chiloglottis sp.
aphylla : without leaves.
aquilina : leaf-outline like the beak of an eagle.
arbuscula : a small tree or shrub.
argophylla : leaves boat-shaped.
arguta : neatly shaped.
aristata : the beard of a head of wheat or barley, but often used to indicate any erect prolongation of a member.
Artichoke : Astelia alpina.
arundinacea : resembling Arundo, a genus of reeds.
arvensis : of a field.
ascending : not decumbent, but nearly so.
aspera : rough.
auriculata : leaves shaped like an ear.
aviculare : a bye-way ; an unfrequented spot.
axil : the angle of junction of a leaf to the stem.
axiflora, axillaris : flowers growing in the axils.
Banyalla : Pittosporum bicolour.
barbata : bearded.
Bathurst burr : Xanthium spinosum.
Bauera : Bauera rubioides.
Bauera, yellow : Hibbertia billardieri.
Bedstraw : Galium sp.
bellidioides : like Bellis, the Daisy.
berry : a succulent fruit, with few or many seeds immersed in fleshy matrix.
betonicæfolia : leaves shaped like those of Betony.
bicalcarata : two-spurred.
bicolour : two-coloured.
bicuspidata : to have two protuberances on a member, as on the valves of a fruit.
bidens : two-toothed, or ending in two prolongations.
Bidgee-widgee : Acæna sanguisorba.
billardiera : La Billardier, a French botanist who worked in Tasmania in the early part of the last century.
Bindweed : Convolvulus sp.
Birch, native : Dodonæa viscosa.
bitterleaf : Daviesia latifolia.
Black boy : Xanthorrhœa australis.
Black fern : Athyrium australe.
Blackman's potatoes : Wurmbea dioica.
Blackwood : Acacia melanoxylon.
Black orchid : Lyperanthus nigricans.
Blinks : Montia fontana.
Blueberry : Dianella sp.
,, climbing : Billardiera longiflora.
Blue creeper : Comesperma volubile.
Bottlebrush : Melaleuca sp. ; also often applied to Callistemon.
Boobialla : Myoporum insulare ; also sometimes (erroneously) Acacia sophoræ.
Box : Bursaria spinosa.
brachiatus : short.
brachystachium : short-spike, in allusion to the mass of flowers.
Bracken : Pteris aquilina.
bract : scales on a flower-stalk.
bracteole : a bract close under or on the calyx, usually a pair and opposite.
bracteatum : with conspicuous bracts.
Bramble : Rubus fruticosus, and often parvifolius.
breviculmis : short stemmed.

brevifolia : short leaf.
brevilabre : short tongue.
Briar : Rosa rubiginosa.
bromoides : Bromus, a genus of Grass.
Broom : Sarothamnus.
,, native : Calythrix tetragona.
brunonis : after Robert Brown.
Buffalo-grass : Stenotaphrum americanum.
bufonius : Bufo, a frog, indicating the plant's habitat.
Bugle, native : Ajuga australis.
bulbiferum : bulb-bearing; usually applied to plants that develop young on their leaves.
bulbosa : bulbous.
Bull-oak : Casuarina suberosa.
Bulrush : Typha sp.
Burnet, native : Acaena ovina.
Burr : Acaena sanguisorbae.
Buttercup : Ranunculus sp.
Butterfly plant : Utricularia dichotoma.
Buttongrass : Mesomelaena sphaerocephala.
buxifolia : leaves like Buxus, a Euphorbiaceous genus.
caespitosa : growing in a mass.
calendulaceum : like Calendula, the Marigold.
callicarpa : fruit unusually thick-skinned.
calyceroides : resembling Calycera, a South American genus related to Dipsacus and Campanula.
calymega : with a relatively large calyx.
calyptrata : a part, often the perianth, assuming the form of an extinguisher.
calyx : see perianth.
campestris : found in open country.
canariensis : after locality Canary Islands.
Canary-grass : Phalaris canariensis.
candidissimum : from candidus, dazzling white.
canescens : grey, pale.
capensis : from habitat, Cape of Good Hope.
Cape-weed : Cryptostemma calendulaceum.
capillaris : section of a member, for instance a leaf, very slender.
capsule : a dry fruit that opens at maturity, and formed of the blending of two or more carpels, whose ovarian chambers may remain distinct or become more or less coalesced.
cardiocarpa : heart-shaped fruit.
carnea : flesh-coloured.
cartilaginea : from a hard or cartilaginous consistence.
caryophyllea : resemblance to the Pink family, Caryophyllaceae.
Catchfly : Silene gallica, from adhesive exudation on stem.
Catspaw : Trichinium spathulatum.
caudate : tailed.
Celery, native : Apium prostratum.
Celerytop Pine : Phyllocladus rhomboidalis.
centropappus : from pappus-hairs bearing numerous rigid spinulose setae.
ceratophylla : leaves like a deer's horn.
cerinthoides : flowers with a superficial resemblance to those of Cerinthe.
Charlock : Brassica sinapistrum.
Cherry, native : Exocarpus sp.
Cheeseberry : Cyathodes glauca.
Chickweed : Stellaria sp.
Cheshunt Pine : Fitzroya archeri.
chlorantha : flowers with a greenish tinge.
ciliare, ciliate : fringed with fine hairs.
cinerea, cinerascens : ash-coloured.
circinate : buds coiled like a watch-spring.
clandestina : hidden, referring to habit.
clavate : club-shaped, or with a club at the ends of members.
Clover : Trifolium sp., often also (but erroneously) given to species of Medicago.
,, Bokhara : Melilotus alba, &c.
,, Dutch or white : Trifolium repens.
,, purple : Trifolium pratense.
,, reversed : Trifolium resupinatum.
,, strawberry : Trifolium fragiferum.
,, yellow : Trifolium agrarium and minus.
,, zigzag or Cow Clover : Trifolium medium.
Clovertree : Goodia lotofolia.
Club moss : Lycopodium sp.
coccifera : from the plant first described being infested with coccus (Scale-insect).
Cockatoo orchid : Caleana major.
Cock's foot : Dactylis glomerata.
Coffee berry : Coprosma hirtella.
collinus : a hill, from customary habitat.
comans : hairy.
complanatus : smooth, flat.
concinna : neat.
confertifolium : leaves crowded together.
congesta : crowded (glands on a labellum).
Coral Pea : Kennedya prostrata.
cordate : heart-shaped, often referring to the base of the lamina of a leaf.
cordifolia, cordigera, &c. : heart-shaped.
Corncockle : Githago segetum.
corniculata : a small horn, referring to fruit.
coriacea : leathery.
corolla : see perianth.
coronopifolia : leaves like those of Senebiera coronopus, a cruciferous plant.
corrifolia : leaves like those of Correa.
corymb : a panicle in which all the flowers attain the same plane, thus resembling an Umbel.
Cotton bush : Pimelea nivea.
Couch : Triticum repens.
,, Indian : Cynodon dactylon.
Cow horns : Pterostylis nutans.
Cranberry, native : Astroloma humifusum.
Cranesbill : Erodium cicutarium, also small-flowered Geraniums.
crassifolia : coarse-leaved.

crassiusculus : rather coarse, for the genus.
Cress, bitter : Cardamine sp.
,, hoary : Lepidium draba.
,, field : Lepidium campestre.
,, narrow-leaved : Lepidium ruderale.
,, swine's : Senebiera coronopus.
,, winter : Barbarea vulgaris.
,, water : Nasturtium officinale.
Crested dog's tail : Cynosurus cristatus.
crinita : long-haired, as numerous hair-like awns massed in the head of a grass.
crispus : curly (wavy margin to a leaf).
cristate : crested.
Croton : Beyeria viscosa.
cucullata : shaped like a hood.
Cudweed : Gnaphalium sp.
cuneate : wedge-shaped.
cupressiformis : resembling a Cypress.
Currant, native : Leucopogon richei and L. lanceolatus; also Coprosma billardieri and C. nitida.
Currijong : Plagianthus sidoides; the name is also often given to species of Pimelea.
curta : shortened; as in the divisions of the perianth, being shorter than in other species of the genus.
curviflora : perianth somewhat bent.
cuspidata : having a small prominence.
Cutting-grass : Gahnia psittacorum.
cyanea : blue-coloured.
cyanocarpa : blue-fruited.
Cypress, native : Callitris rhomboidea.
cyme : an inflorescence in which the central or terminal flower opens first, and the group of flowers is enlarged by the prolongation and subsequent development of branches growing from beneath the apex.
Cytisoides : resembling Cytissus, a leguminous genus.
Daisy, English : Bellis perenne.
,, native : Brachycome sp.
,, tree : Olearia stellulata and closely allied species.
Dandelion, English : Taraxacum officinale; the name is often (but erroneously) given to Hypochæris radicata.
,, native : Microseris forsteri; also (but without reason) Podolepis acuminata.
Daphnoides : superficially resembling Daphne, a thymeleaceous genus.
Darnel : Lolium temulentum.
dasyphyllum : from resemblance to the obsolete compositous genus Dasyphyllum, now referred to Flotovia.
dealbata : whitened.
debilis : weak.
deciduous : to depart, that is in botany to be shed.
decipiens : to deceive, alluding to its likeness to another plant.
decompositum : much divided (leaf).
decumbent : lying down, but in botany not quite prostrate.
decurrens, decurrent : to run down.
decussate : arranged in two planes.
defoliatum : deprived of leaves.
deformis : ill-shaped.
dehiscent : opening at maturity, many fruits, anthers, &c.
denticulata : toothed, the small protuberances on margins of leaves, &c.
depressa : habit depressed.
Derwentia : River Derwent, locality where plant was first gathered.
despectans : looking down, from the drooping flowers.
despectum : insignificant.
Devil's gut : Lyonsia straminea.
diander : two stamens in the flower.
dicarpa : divided in two parts.
dichopetala : petals deeply bifid.
dichotoma, dichotomous : dividing into a pair of equal branches.
dictyosperma : seed with net marking on the surface.
diffuse : spread about, dispersed.
dioica, diœcious : sexes on different plants.
diphylla : with two leaves.
discolour : colour differing from that prevailing in the genus.
dissectum : much divided (leaf).
distans : widely separated (from its relatives).
distichous : in two rows.
distyla : carpel bearing two styles.
divaricata : widely spreading.
diversifolia : leaves variable.
Dock : Rumex crispus and allied species.
Dodder : Cuscuta sp.
Dogwood : Pomaderris apetala.
,, false : Pomaderris elliptica.
drachophylla : leaves shaped like those of Dracophyllum, a sheathing leaved Epacrid, which itself is named from its leaves resembling those of the liliaceous genus Dracæna.
Drake : sometimes applied to Lolium temulentum.
drupe : a fleshy non-bursting fruit, whose solitary seed is contained in a hard stony endocarp, for instance plum, cherry, &c.
drupel : a small drupe in a cluster, as in raspberry.
dubia : doubtful, a doubtful species or a doubtful member of a genus.
Duck Orchid : Cryptostylis longifolia.
Duckweed : Lemna sp.
duriuscula : of a hard consistency.
Ebony, native : Dodonæa viscosa.
elatius, elatior, elatum, &c. : growing tall.
Elder, native : Sambucus gaudichaudiana.
elatinoides : like Elatine.
empetrifolia : leaves shaped like those of Empetrum, a northern genus not far removed from the Euphorbia family.
emphysopus : a generic name originally given to Lagenophora emphysopus.
endemic : peculiar to the place.
enodis : without nodes on the stem.
epiglottis : from a fancied resemblance of the fruit to the human epiglottis.

erect : the habit without a tendency to lie down.

ericoides, ericinum : like Erica, the typical Heath.

eriocarpa : woolly-fruited.

eriocephalum : woolly-headed.

erubescens : disposed to be red.

Everlasting : Helichrysum and Helipterum species.

exaltatum : very tall for the genus.

exiguum : very small.

exserta ; to extend beyond, as stamens beyond the tube of a corolla.

expansa : spread out.

exsertus : stretching out.

Eyebright, native : Euphrasia sp.

falcate : shaped somewhat like a sickle.

fasciculate : arranged in clusters (leaves).

fastigiate : a high point or point of honour, indicating a species with an unusually high development for the genus.

Fat hen : Chenopodium murale, &c.

Fennel : Fœniculum vulgare.

ferrugineous : coloured like iron rust.

Fescue, meadow : Festuca pratensis.

,, tall : Festuca elatior.

.. hard : Festuca duriuscula.

.. sheep's . Festuca ovina.

.. rat's tail : Festuca myurus.

.. reed : Festuca sylvatica.

Fibrous grass : Stipa pubescens and allied species.

ficifolia : leaves shaped like many species of Ficus, chiefly alluding to the Moreton Bay Fig.

filamentosa : filamentous.

filicifolia : fern-leaved.

filiform . thread-like.

Filmy fern : Hymenophyllum sp., but principally H. flabellifolium ; also given to Trichomanes venosum.

filum : cord-like.

Fireweed : Senecio australis, also sometimes S. velleyoides.

fistulosa : hollow or tube-like.

flabellifolium : leaves shaped like a fan.

flaccidum : flaccid, weak, drooping.

flava, flavescens : yellow.

Flax, native : Linum marginale.

flexuosa : bent alternately.

floral-tube : the whorls of a flower, the calyx, corolla, andrœcium and pistil, are normally inserted close above one another on the apex of the flower-stalk, which is termed the torus or thalamus ; the torus may be minute or variously enlarged ; it may be expanded into a cup bearing the calyx, corolla, and stamens on its margin, and, still further, this cup may be intimately blended with the wall of the pistil when the calyx, corolla, and stamens are epigynous, and the pistil inferior ; in older botanical works this floral-tube is termed the calyx-tube.

Flowering rush . Xyris sp.

fluitans : floating.

fluvialilis, &c. : a river habitat.

Fly orchid : Prasophyllum fuscum and patens.

Fog : Holcus lanatus.

follicle : a dry fruit, bursting at maturity down one suture, normally containing more than one seed, and formed of but one carpel ; a legume is a variety of follicle.

fontana : habitat in a spring or fountain.

Forget-me-not : Myosotis sp.

formosa : first discovered habitat the Island of Formosa.

Foxtail, meadow : Alopecurus pratensis.

,, marsh : A. geniculatus.

.. slender : A. agrestis.

fragilis . frail.

Fuchsia, native : Correa speciosa and lawrenciana.

Fumitory : Fumaria officinalis.

furcata : forked.

Furze : Ulex europaeus.

.. native : Daviesia ulicina.

fuscum : brownish.

gamopetalous . petals more or less united.

geniculata : bent or kneed (at the nodes).

Germander : Teucrium species.

gibbous : swollen or sack-shaped.

glabra : surface smooth, hairless.

glabella : nearly glabrous.

gladiatum : shaped like a sword (leaves).

glandulosa : bearing glands on the surface.

glauca : of an ashy blue tint.

globulus : globe-like (appearance of flower).

glomerata : massed together (flowers).

glutinosa : surface sticky.

Golden Rosemary . Oxylobium ellipticum.

Gordon Lily : Blandfordia marginata.

Gorse : Ulex europæus.

Gourd, native . Sicyos angulata.

gracilis . slender.

graminea, &c. . grass-like.

grammitides : like Grammitis, a genus of polypodiaceous ferns.

Grass-tree : Richea dracophylla ; also Xanthorrhœa australis.

.. giant Richea pandanifolia.

.. prickly . Richea scoparia.

Greentops : Pterostylis pedunculata.

Guitar plant : Lomatia species.

Gum, blue . Eucalyptus globulus.

.. cider : Eucalyptus gunnii.

.. drooping : Eucalyptus risdoni.

.. Ironbark : Eucalyptus sieberiana.

.. Mountain Ash : Eucalyptus regnans.

.. Manna : Eucalyptus viminalis.

.. peppermint : Eucalyptus amygdalina. Local names inconstant, but perhaps the commonest are : White for the very narrow leaved forms, black for the broader leaved and blue for the glaucous drooping forms that are usually referred to E. risdoni, var. elata.

Gum, red : E. acervula, and on the slopes of Mt. Wellington E. muelleri.
,, stringy-bark : Eucalyptus obliqua.
,, topped stringy : smooth-barked varieties of E. obliqua and forms connecting it with E. regnans, and possibly E. haemastoma.
,, peppermint-topped stringy : narrow-leaved forms of Euc. regnans, and forms connecting with E. amygdalina.
,, white-topped stringy : a name given on the North-East Coast to E. haemastoma and often allied species.
,, swamp : Eucalyptus regnans and in some districts E. viminalis.
,, weeping : Eucalyptus pauciflora.
,, white : Eucalyptus viminalis.
gynœcium : *see* pistil.
Heart berry : Aristotelia peduncularis.
hederacea : a fancied resemblance to the habit of Ivy.
Hedge mustard : Sisymbrium officinale.
Helmit Orchid : Pterostylis cucculata.
helioscopia : rayed like the sun.
heteronema : varied in form.
heterophylla : leaves variable in form.
hexandrum : having six stamens.
hibbertioides : generally resembling a Hibbertia, a dilleniaceous genus.
Hickory, native : Eriostemon squameus.
hieracoides : like Hieraceum, the Hawkweed of the Northern Hemisphere.
hirsute : hairy.
hirta, hirtella : rough or coarsely hairy.
hispid : bristly.
Hog-weed : Polygonum aviculare.
Holly, native : Orites milligani, also in parts Coprosma hirtella.
Holy-grass : Hierochloë sp.
Honeysuckle : Banksia sp.
Honeywood : Bedfordia sp.
Hop, native : Daviesia latifolia, from the bitterness of the leaf; also often Dodonæa viscosa, from appearance of fruit.
Horizontal scrub : Anodopetalum biglandulosum; occasionally the name has also been applied to Richea scoparia.
humifusum : spread on the ground.
humilis : of humble dimensions.
Hyacinth, native : Thelymitra sp.
hygrometrica : sensitive to moisture.
hypogynous : inserted beneath the gynœcium.
hyssopifolia : leaves shaped like those of Hyssopus, a labiate genus.
Ice plant : Tetragona implexicoma.
imberbis : beardless, alludes to the absence of hypogynous scales.
imbricate : overlapping, like the slates on a roof.
immarginate : the apex abruptly ending (leaf).
implexicoma : interlaced (habit).
impressa : impression due to conspicuousness.
incanum : quite white.
incarnata : flesh-coloured.
incisa : leaf deeply divided.
indehiscent : not bursting at maturity, for instance a nut or berry.
Indigo, native : Indigofera australis.
indutum : covered or clothed, in allusion to copious development of hairs.
indumentum : surface development of hairs or scales.
inops : dwarf.
integrifolia : leaves entire.
intricatum : complicated or involved, perplexing.
inversa : order reversed, as staminate flowers being placed at the base of the spikelet, in a species of Carex.
involucrata : disguise, from being unlike type of genus.
involute : margins rolled inwards on the upper surface (leaf).
Iris, blue : Patersonia glauca.
,, mountain : Hewardia tasmanica.
,, white : Diplarrhena moræa.
Ironweed : Lithospermum arvense.
irrigua : wet (habitat).
ixioides : like Ixia, a genus of Iridaceæ.
Jack in the Box : Stylidium graminifolium.
japonicum : first discovered in Japan.
javanicum : native of Java.
johnstoni : R. M. Johnston, a prominent natural and economic scientist.
junceum : resemblance to Juncus the Rush.
juniperina : like the Juniper.
Kangaroo-apple : Solanum aviculare.
Kangaroo-grass : Anthistiria ciliata.
Kentucky blue grass : Poa pratensis.
King River Lily : Milligania longifolia.
King William Pine : Arthrotaxis cupressoides; the name is now often given to A. selaginoides.
Knotgrass : Polygonum sp.
Laburnum, native : Goodia lotofolia.
lacustris : lake (habitat).
Lady fern : Polypodium punctatum.
lanatus, lanigerum : woolly.
Lancewood : Eriostemon squameus.
lævigatum : lightly formed, smooth, soft.
lanuginosa : slightly woolly.
lappaceous : supposed resemblance to lappa the Burdock.
lasianthos : the flower woolly.
latifolium : broad-leaved.
Laurel, native : Anopterus glandulosus.
lautus : clean, elegant.
laxifolia : leaves loose, in comparison to its near relative.
Leatherwood : Acradenia franklinii, often erroneously Eucryphia billardieri.
ledifolia : leaves resembling those of Ledum, a genus of Heath.
legume : a dry, single-carpelled fruit, splitting at maturity into two valves, containing few or many seeds; a slightly modified follicle.
lenticularis : lens-shaped fruit.
lepidophylla : scale-leaved.
leptocarpus : narrow-fruited.

leptophylla : narrow-leaved.
leucophractum : enclosed in white.
leucopsidium : a white appearance.
Lignum vitæ, native : Dodonæa viscosa.
ligustrina : resembling Ligustrum, the common Privet.
Lilac, native : Prostanthera rotundifolia, also P. lasianthos.
linifolia : leaves narrow-linear.
lirata : disputable (doubtful species).
littoralis : of the shore (habitat).
lomentum : a legume containing more than one seed, which, instead of bursting at maturity, breaks into one-seeded pieces or articles.
longifolia : leaves with an elongated tendency.
longiscapa : flower-stalk elongated.
Loosestrife : Lythrum salicaria.
Love creeper : Comesperma volubile.
lucidus : bright, fair.
lupulina : resembling Lupinus.
luteo-album : yellowish-white.
lycopodioides : resembling Lycopodium.

Macquarie vine : Muehlenbeckia adpressa.
macrantha : large-flowered (for the genus).
maculata : spotted.
Maidenhair : Adiantum æthiopicum.
Maiden's blush : Convolvulus erubescens.
Mallow : Malva sp.
Mangrove, native : Myoporum insulare.
Manuka : Leptospermum scoparium, and often allied species.
Maram-grass : Psamma arenaria.
marginata : from conspicuous development of the margin.
Marianum : named in sympathy of an old legend after the Virgin Mary.
Marigold : Calendula sp.
melanocarpum : black-fruited.
melanoxylon : black wood.
melantha : black.
melitensis : native of Malta.
member : a definite portion of a plant considered without reference to function. *See* organ.
micranthum : flowers relatively small.
microcarpa : small-fruited.
microphylla : small-leaved.
mignonette, native : Stackhousia linearifolia and allied species.
Mimosa : any pungent leaved Acacia, but chiefly A. verticillata.
,, drooping : Acacia riceana.
Mistletoe, native : Cassytha sp.
mollisima : soft.
monantha : one-flowered.
monœcious : stamens and pistils borne by different flowers, but on the same tree.
monogyna : to indicate an abnormal reduction of the pistil to one carpel.
Moonwort : Botrychium sp.
moorei : T. B. Moore, one who has done much in the present day to advance the knowledge of Tasmanian plants.
moræa : from likeness to Moræa, a South
moschatum : smelling of musk.
African genus of Iris.

Mountain Ash : Eucalyptus regnans.
Mountain Yew : Podocarpus alpina.
Mouse ear : Cerastium glomeratum.
mucro : an abrupt pointed apex, as an abrupt point formed at the apex of a leaf, &c.
mucronate : developing a mucro.
muelleri : after the celebrated Australian botanist, Ferdinand von Mueller.
multicaulis : many stems.
murale : of a wall, common in waste places, by side of walls, &c.
muscoides : moss-like.
Musk : Olearia argophylla.
,, dwarf : Olearia viscosa.
Mustard, wild : Brassica sinapistrum.
,, hedge : Sisymbrium officinale.
mutica : brief, evanescent for genus.
myrsinoides : resembling Myrsine, a genus of small trees not far removed from Primulas.
Myrtle : Fagus cunninghami.
myrtifolia : leaves resembling those of the true Myrtles.
Nancy : Wurmbea dioica.
nanum : dwarf.
Nightshade, black : Solanum nigrum.
nigrum, nigrescens : black.
nitens : shining.
nitida : neat.
nitidulus : rather handsome, neat.
nivea : snowy, from white vestiture; also alpine (habitat).
nodosa : knotted or formed like a knot.
notabilis : distinguished, noteworthy.
nubigena : cloud-born; alpine (habitat).
nutans : nodding.

Oat, false : Arrhenatherum avenaceum.
,, wild : Avena fatua.
obcordate : inversely heart-shaped, that is with the apex towards the axis.
oblique : unsymmetrical, that is one half smaller than the other.
obovate : inversely egg-shaped, with the thicker end outwards.
obtuse : (apex of a leaf) blunt.
odorata : scented.
Œthiopicum : North Africa (habitat).
officinalis : the species of the genus recognised in the British Pharmacopœia as the producer of a specific medicament.
Old man fern : Dicksonia antarctica.
oleraceus : appearing edible.
oligantha : probably from flower resembling that of the Olive, or possibly few-flowered.
oligocephalus : few-headed.
operculata : from the upper part of adjoining and combined pistils being thrown off in a piece at maturity.
organ : a circumscribed portion of a plant that performs a specific function, as a flower is an organ of reproduction, a chlorophyll tid is an organ of photosyntax; looked at from a functional or physiologic aspect only. *See* member.
ovary : the cavity of a carpel or entire pistil, in which the ovule or ovules are developed.

ovate : egg-shaped; when applied to a leaf the broader portion of the lamina is towards the axis. *See* obovate.
ovina : of a sheep; tendency to stick in a sheep's wool.
oxycedrus : shrub with acutely pointed leaves.
Oyster Bay Pine : Callitris rhomboidea.
Palm fern : Cyathea cunninghami.
paludosa : of a marsh (habitat).
pandanifolia : leaves resembling those of Pandanus, a genus of Aroids.
panicle : a compound raceme, where the flower-stalks are all about the same length, so that the flowers are neither collected in bunches (thyrsus) nor brought to the same level (corymb).
papillosus : covered with small projections.
pappochroma : pappus tinged with yellow.
paradoxa : unusual, strange.
parnassifolia : leaves resembling those of Parnassia, a genus related to the Saxifrages.
Parrot's food : Goodenia ovata.
Parsley, native : Trachymene australis.
,, fern : Cheilanthes tenuifolia.
parvifolia : short leaves.
patens : wide open (flower).
patula : spreading.
pauciflora : few-flowered.
Peach-berry : Lissanthe strigosa.
Pear, native : Hakea acicularis; also in many parts Pomaderris apetala.
pectinatus : shaped like a comb (leaf).
pedicel : the immediate stalk of a flower when there are many flowers on a common peduncle.
peduncle : the stalk of a flower when that is solitary, or the common stalk when more than one flower are developed upon a common stalk.
pedunculate : peduncle much developed.
peltate : more or less discoid, and attached from the back (leaf).
Pencil-cedar : Arthrotaxis sp., very indiscriminately.
penicillata : a brush-like tuft of hairs.
Pennywort : Hydrocotyle hirta.
pentandra : five stamens in the flower.
Pepper, native : Drimys aromatica.
perenne : perennial, lasting many years.
perfoliatus : the base of the leaf extending beyond the stalk and connate, so as to leave the stalk growing through the leaf.
perianth : the inessential whorls of a flower, whether one or two, that is whether both calyx and corolla are present or not; sometimes only used when there is but one floral envelope; other botanists only apply it to the floral envelope of the Monocotyledons.
perpusillum : very small.
persoonioides : like Persoonia, a proteaceous genus.
peruviana : Peru, first discovered habitat.
petrophila : liking stony situations.
phylicifolia : leaves resembling those of Phylica, a rhamnaceous genus.
Pigs'-faces : Mesembryanthemum æquilaterale.
Pillwort : Pilularia globulifera.
Pilose : velvety.
Pimpernel : Anagallis arvensis.
pinifolia : leaves slender, cylindric or nearly so.
Pink berry : Cyathodes divaricata and allied species.
Pinkwood : Eucryphia billardieri.
pinnate : leaf divided into five or more leaflets arranged on opposite sides of a common stalk.
pistil : the central whorl of a perfect or female flower; it is made up of one or more free or united carpels, in the ovarian cavities of which the ovule or ovules are developed; in normal cases it becomes the fruit.
planifolius : flat-leaved.
platycalyx : calyx broad.
plebeja : lowly.
Plum, native : Cenarrhenes nitida.
Poa, annual or lawn : Poa annua.
,, flattened : P. compressa.
,, meadow : P. pratensis.
,, roughish : P. trivialis.
,, rigid : P. rigida.
,, floating : Glyceria fluitans.
Poison vetch : Swainsonia lassertifolia.
polygalifolia : Polygala-leaved.
polygyna : many carpels in the flower.
polymorpha : assuming many shapes (leaves).
Pondweed : Potamogeton sp.
Poppy, native : Papaver aculeatum.
porrifolius : leaves shaped like those of Allium porrum, the common Leek.
Potato, native : Gastrodia sesamoides.
præcox : early (flowering).
prælongus : very long.
Prairie-grass : Ceratochloa unioloides.
pratensis : growing in meadows.
pratioides : like Pratia, a genus close to Lobelia.
prenanthoides : like Prenanthes, a Composite.
Prickfoot : Eryngium vesciculosum.
Prickly beauty : Pultenæa juniperina.
Prickly tree-fern : Alsophila australis.
Primrose, native : Goodenia geniculata.
primulifolius : Primula-leaved.
prismatocarpus : fruit shaped like a prism, that is cylindric with three or more longitudinal angles.
procera : large, coarse.
procumbent : lying flat on the ground.
proliferous : bearing progeny as offshoots.
propinqua : near (another species).
pruinose : so delicately hairy, or with a surface cellular development, as to appear frosty.
pseudocyperus : false Cyperus, from resemblance.
psittacorum : frequented by Parrots.
pterocarpa : fruit winged.
pubescent : delicately hairy.
pugioniformis : shaped like a dagger.
pulchellus, pulcher : beautiful.
pulcherrima : very beautiful.

pulvinate : cushion-shaped.
pumila, &c. : dwarf.
punctatum : dotted.
pungent : prickly pointed.
Purple broom : Comesperma retusa.
Purple heath : Tetratheca pilosa and glandulosa.
pusilla : small.
pygmæa : very small.
pyriforme : pear-shaped.
pyrenaica : first ascertained habitat Pyrenees.
quadridentata : four-toothed (corolla).
quadriseta : four-bristled (termination of flowering glume).
quadrivalvis : four-valved (ovarian tubercles and bracts of each fruit in the cone).
Quake-grass : Briza sp.
Quillwort : Isoëtes lacustris.
raceme : a many-flowered inflorescence, in which the flowers are stalked and arranged along an unbranched common stalk.
radicata, &c. : refers to root, usually meaning deep-rooted.
radicans : rooting.
radula : to scrape, from roughness.
ramulosa : much-branched.
rariflora : shy-flowering.
rarum : thin.
Raspberry-Jam Wood : Alyxia buxifolia.
Raspberry, native : Rubus parvifolius.
,, mountain : Rubus gunnianus.
receptacle : place where the florets of a composite flower are developed.
redolens : sweet-scented.
Red-Pine : Arthrotaxis selaginoides, but often the other species as well.
renifolium : leaves kidney-shaped.
reniformis : kidney-shaped.
repens, reptans : creeping.
Rest-Harrow : Ononis arvensis.
reticulatus : netted (on leaves).
retuse : the end (of leaf) notched or turned down.
revolute : margins recurved.
rhachis : the portion of a common stalk upon which are inserted the leaflets or flowers : the portion below is termed the stipes.
rhomboidea : in the shape of an oblique parallelogram (leaf, cladode, cone, &c.).
Rib-grass : Prantago sp.
rigida : stiff, rigid.
riparia : river-bank (habitat).
rivularis : a brook (habitat).
Rocket, mountain : Bellendena montana.
,, native : Epacris lanuginosa.
Rose, native : Bauera rubioides.
rosmarifolius, &c. : likeness to Rosemary.
rubioides : from Rubus, the raspberry and bramble genus.
rubiæfolia : leaves like those of Rubia, the type genus of Rubiaceæ.
Rue-fern : Gymnogramme rutæfolia.
rufa : reddish.
Running postman : Kennedya prostrata.
ruscifolia : leaves like Ruscus, the Butcher's broom.
Rush : Juncus communis.
,, sea : J. maritimus.
,, toad : J. bufonius.
,, flowering : Xyris sp.
rutæfolia : Rue-leaved.
Rye, English : Lolium perenne.
,, Italian : L. italicum.
,, annual : darnel, L. temulentum.
Sagg : Xerotes longifolia, and often applied to species of Lepidosperma.
salicaria : a generic name sometimes given to Lythrum salicaria, derived from Salix, a willow, from likeness of foliage.
salicina, salignus, &c. : willow-like.
Salsify : Tragopogon porrifolius.
Sandalwood, native : Alyxia buxifolia.
Sandspurry : Spergularia rubra.
sanguisorbæ : from likeness to Sanguisorba.
Sassafras : Atherosperma moschatum.
saturejoides : from likeness to Satureia, a Labiate genus.
Saucy Jack : Centaurea melitensis.
saxicola, saxosa : rocky (habitat).
saxifraga : from likeness to the genus Saxifraga.
scabrous, scabrid : clothed with short, rigid hairs, or acute tubercles.
scandens : climbing.
scape : stalk of a flower or inflorescence where it does not differ sufficiently from the stem to warrant its being called a peduncle.
scapiformis : the whole stem resembling a scape.
scarious : hard harsh : not green and succulent.
Scented grass : Hierochloë rariflora, also applied to the other species of Hierochloë.
schænoides : resembling Schænus, a genus of Sedge.
scirrea : hard (texture).
scoparium : much branched.
scorpioides : curved in fancied resemblance to a scorpion's tail.
Scrub-vine : Bauera rubioides.
scutellifolius : leaves shield-shaped.
Sea-wrack, Sea-grass : Zostera sp.
Sedge : a name applied to any species of Cyperaceæ, and also Restiaceæ.
selaginoides : from fancied resemblance in habit to Selaginella, a Club-moss.
semiannularis : half-ringed, from the semi-circular bands of hair on the backs of the flowering glumes.
semibarbatum : half-bearded : in Bulbine semibarbatum half the stamens have hairy appendages : in Stipa semibarbata the awns are hairy for half their length.
semipapposum : pappus very reduced for the genus.
sericea : silky.
serpillifolia : leaves similar to those of Thymus serpyllum, the herb Thyme.

serrate, serrulate : leaves marked with short tooth-like projections on the margins.

sesamoides : flowers resembling those of Sesamum, an East Indian genus of Pedaliaceæ.

sessile : inserted directly into the stem; not stalked (leaves).

setaceous : bristly, in allusion to the narrowness of the leaves.

Shamrock, native : Lotus australis.

Shelf-fern : Asplenium flabellifolium.

Shepherd's needle : Scandix pecten-veneris.

Shepherd's purse : Capsella bursa-pastoris.

She-oak : Casuarina quadrivalvis, also named C. stricta.

Shield-fern : species of Aspidium, including Polystichum.

siculæformis : sickle-shaped (leaves).

sidoides : like Sida, one of the Mallow family.

siliqua : a form of capsule constructed of two carpels, with a common ovarian cavity and parietal placentas; the placentas are united by a false dissepiment, or replum. Some botanists consider the siliqua to be four-carpelled, the valves and placental portions each being members.

silicula : a short siliqua.

Silver fern : Litobrochia incisa.

,, grass : Aira caryophyllea.

,, weed : Potentilla anserina.

silvestris : wood or plantation (habitat).

sinapistrum : like Sinapis, Mustard.

Soft brome : Bromus mollis.

Soldiers' buttons : Craspedia richei.

Soloman's seal : Drymophila cyanocarpa.

Sorrel, sheep's : Rumex acetosella.

spartioides : resembling the leguminous genus Spartium, the Spanish broom.

spathulate : shaped like a spathula, that is narrow, nearly equal in breadth, but gradually broader towards the apex.

speciosa : showy, handsome.

Speedwell, native : Veronica formosa, and often other allied species.

,, mountain : Veronica nivea.

sphærocephalus : inflorescence in a spherical head.

sphacelate : divided in sections by transverse divisions.

Spider Orchid : Caladenia patersoni and allies.

spike : a many-flowered inflorescence, in which the flowers are sessile on the common stalk; it may be loose and elongated or short and dense; if very dense, and surrounded by an involucre, it is termed a Capitulum.

Spinach, New Zealand : Tetragona expansa.

Spleenwort : the genus Asplenium.

Spotted Orchid : Dipodium punctatum.

sprengelioides : resembling Sprengelia.

Spurge : the genus Euphorbia.

,, Sun : Euphorbia helioscopia.

squamea, &c. : overlapping scales.

squarrose : very rough (general aspect).

Stagger-weed : Stachys arvensis.

stamen : a modified leaf, carrying a sack of one, two, or four compartments filled with pollen, termed the anther, on a stalk termed the filament, or it may be sessile. The stamens of a flower are situated in a complete flower between the corolla and the pistil, and constitute the staminal whorl, or Andrœcium.

Star of Bethlehem : Burchardia umbellata.

stellulata : from minute star-shaped hairs on the leaf.

sterilis : from habitat in sterile places.

Stinkwood : Zieria smithii.

stipes : stalk; usually applied to the stalk of a fern leaf, or the stalk of an inflorescence below the insertion of the flowers. The portion of the leaf to which the leaflets or leaf division, &c., are attached is termed the rhachis.

stipoides : resembling the genus Stipa.

stipules : a pair of small bodies at the base of leaves.

St. John's Wort : Hypericum sp.

Stonecrop : Tillæa verticillaris.

straminea : thatch, from an imaginary resemblance due to procumbent clustered habit

striatum : longitudinally lined.

strict, &c. : erect, straight.

strigose : clothed with few rigid hairs, or the leaves rigid and hair-like.

striolatum : furrowed, grooved.

stylosa : style unusually developed for genus.

suaveolens : sweet-scented.

suberosa : cork of bark very conspicuous.

submersa : underwater (habit).

subspicatum : inflorescence nearly a simple spike.

subulate : awl-shaped.

suffocata : to endure, from habit being buried amongst other plants.

Sundew : Drosera sp.

supina : lying on its back (habit).

surrupens : concealed (habit).

Swamp Pea : Lotus corniculatus.

Sweet scabious : Scabiosa atropurpurea.

Sweet vernal : Anthoxanthum odoratum.

Sword fern : Grammitis australis.

Tobacco, native : Cassinia spectabilis.

tannensis : Island of Tanna, first observed habitat.

Tare, native : Swainsonia lassertifolia.

taxifolium : leaves resembling those of Taxus, the Common Yew.

Tea-tree : Leptospermum lanigerum, lævigatum and flavescens.

,, mountain : L. rupestre, but more often L. lanigerum. var. montanum.

,, swamp : Melaleuca ericifolia, Kunzea corifolia.

Teazel : Dipsacus sp.

temulentum : intoxicated, from supposed toxic properties.
tenax : tenacious.
tenella : slender.
tenuifolia : slender leaf.
tenuior : rather slender.
tenuissimus : very slender.
terete : round in transverse section, cylindric.
ternate : divided in three equal divisions.
tetragona : four-angled.
tetragyna : four carpels in the pistil.
tetraphyllus : four-leaved.
tetraquetrous : four prominent angles.
teucrioides : resembling Teucrium, a Labiate genus.
thesioides : resembling Thesium, a genus of the Sandalwood family.
Thistle : Carduus sp.
.. milk : Carduus marianus.
.. sow : Sonchus oleraceus.
.. Scotch : in Australia the name given to Carduus lanceolatus.
.. California : C. arvensis.
thymifolia : Thyme-leaved.
thysiflorus : flowers arranged in thyrsi.
thyrsus : a panicle where the ultimate flower-stalks are rather short, so that the flowers are bunched on the primary or secondary branches of the inflorescence.
Tiger Orchid : Diuris sulphurea and D. maculata.
Timothy : Phleum pratense.
tinctoria : wet, moisten; probably figurative from appearance.
tomentum : the hairy, scaly, or glandular development on the epidermis.
tortuous : curved, usually indicating spirally.
torus : the end of the stalk upon which the members of a flower are inserted, also termed thalamus, obsoletely also receptacle and erroneously disk.
Tourquoise-berry : Drymophila cyanocarpa.
Tree-fern : Dicksonia antarctica.
.. palm : Cyathea cunninghami.
.. prickly : Alsophila australis.
.. river : Todea barbara.
tremula : tremulous.
triandrum : three anthers.
trichomanoides : Trichomanes-like.
trifida : divided in three (style).
trifoil : Trifolium species, Clovers.
Trigger-plant : Stylidium graminifolium.
trisulca : deeply divided by three furrows.
truncate : ending abruptly, as though cut short off.
tunbridgense : Tunbridge, first habitat.
turbinate : shaped like a top that is spun by whipping.
Tussock-grass : Poa caespitosa.
Twitch-grass : Agrostis alba and vulgaris.
Ulicina : resembling Ulex, Furze.
uliginosa : marshy (habitat)
umbel : an inflorescence where the individual flower-stalks all arise from one spot, and usually are unequal in length, so that, though they radiate, the flowers all reach the same level. A compound umbel is an inflorescence of many umbels.
umbonate : bearing an umbo, that is a defined terminal process, as a warty central protuberance on an operculum, or a terminal spine on a leaf.
Umbrella-fern : Gleichenia flabellata, also often G. dicarpa.
uncinate : furnished with a hook.
unioloides : resembling Uniola, an American genus of Grass.
urbanum : elegant, refined.
urnigera : shaped like an urn (fruit).
vaginatus : sheath, from reduced leaves.
valvate : meeting edge to edge, petals in the bud may be so placed.
varia : from conspicuous variability.
velleyoides : resembling Velleya, a goodeniaceous genus.
velutinum : velvety.
venosum : meagre, dry.
venusta : elegant, beautiful.
vernal : spring.
verniciflua : exuding varnish.
vernicosa : appearing varnished.
verticillate : arranged in a circle at one spot (leaves on stems).
vesiculosum : covered with vesicles.
vestiture : the clothing of hairs, scales, or glands a plant may bear on its epidermis.
vestitum : bearing a conspicuous vestiture.
Vetch : Vicia sp.
.. native : Bossiaea cordigera.
villous : softly hairy.
viminalis : resembling (leaf) Salix viminalis, a species of Willow.
vimineum : resembling Viminaria, a leguminous genus.
Vine, native : Muehlenbeckia adpressa.
Violet, blue : Viola betonicifolia.
.. white : Viola hederacea.
virgata : twiggy (habit).
viridis : greenish (flowers).
viscosa : viscous, sticky.
vittata : bound with a filet, from fancied resemblance to a small gathered bunch of flowers.
volubile : twining.
vomeriformis : ploughshare-shaped (leaves).
vulcanica : from common habitat amongst igneous rocks.
Waddy or white wood : Pittosporum bicolour.
Wallaby-grass : Danthonia penicillata.
Wallflower, native : Pultenaea subumbellata.
Waratah : Telopea truncata.
.. white : Agastachys odorata.
Water-grass : Glyceria fluitans.
Wattle : Acacia species, but principally those with divided leaves.
.. Silver : A. dealbata.
.. black : A. decurrens.
.. green or river : A. discolour.
.. prickly : A. riceana, verticillata, &c.

White coral flower : Epacris serpillifolia.
White cluster berry : Gaultheria hispida.
White weed : Lepidium draba.
whorl : a number of members, as leaves, petals, stamens, &c., inserted at about the same level around the axis.
Wild Ivy : Platylobium triangulare and obtusangulum.
Willow herb : Epilobium sp.
Willow, native : Acacia verniciflua; also sometimes given to Bedfordia salicina and Pomaderris apetala.
Wire fern : Gleichenia dicarpa.
Wire grass : Tetrarhena juncea, also Cassytha glabella.
Wire weed : Polygonum aviculare.
Woodrush : Luzula sp.
Woodsorrel, native : Oxalis magellanica.
Yellowwood : Pittosporum bicolour.

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